Release Notes

Junos OS Evolved Release 21.2R2 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016, QFX5130-32CD, QFX5220, and QFX5700 Devices

HARDWARE HIGHLIGHTS

- New JNP10016-SF3 fabric for PTX10016 Router supporting upto 230.4Tbps with PTX10K-LC1201-36CD and PTX10K-LC1202-36MR line cards

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Introduction

With Junos OS Evolved, you can enable higher availability, accelerate your deployments, innovate rapidly, and operate your network more efficiently. We've aligned Junos OS Evolved with Junos OS so that you can seamlessly continue to manage and automate your network. There are, however, differences between Junos OS and Junos OS Evolved that you should know about before moving over to this powerful new OS. For details on these changes, see How Junos OS Evolved Differs from Junos OS.

Use these release notes to find new and updated features, software limitations, and open issues for Junos OS Evolved Release 21.2R2.

These release notes are cumulative and are updated for later releases.

For more information on this release of Junos OS Evolved, see Introducing Junos OS Evolved.

Junos OS Evolved Release Notes for ACX7100-32C and ACX7100-48L Devices

IN THIS SECTION

These release notes accompany Junos OS Evolved Release 21.2R2 for ACX7100-32C and ACX7100-48L routers. They describe new features, limitations, and known problems in the hardware and software.

What's New

Learn about new features introduced in these releases for ACX Series Routers.

What's New in 21.2R2

The following section highlights the key feature in this release.

Authentication and Access Control

- **Support for SSH attributes (ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220)**—Starting in Junos OS Release Evolved 21.2R2, support for the follow SSH attributes is added at the `[edit system services ssh]` hierarchy level:

  - sftp

  - root-login

  - client-alive-count-max

  - client-alive-interval

  - max-sessions-per-connection

  [See Enabling Remote Access and File Access Services.]

What's New in 21.2R1

To view other features supported on the ACX platforms, view the Feature Explorer using the following link. To see which features were added in the Junos OS Release Evolved 21.2R1 release, click the Group by Release link. You can collapse and expand the list as needed.

ACX7100-32C

ACX7100-48L

What's Changed

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- What's Changed in Release 21.2R1 | **4**

Learn about what changed in these releases for ACX Series Routers.

What's Changed in Release 21.2R2

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- EVPN | **3**

Learn about what changed in this release for ACX Series routers.

EVPN

- **Minimum auto-recovery time reduced for duplicate MAC address detection (ACX Series, PTX Series and QFX Series)**—Junos OS has changed the minimum value allowed for auto-recovery time for duplicate MAC address detection from 5 minutes to 1 minute. The auto-recovery time is the length of time that the device suppresses a duplicate MAC address. Reducing the auto-recovery time allows customers to quickly recover from a MAC address duplication state. You configure the `auto-recovery-`

time option under the `duplicate-mac-detection` statement at the `edit routing-instances routing-instance-name protocols evpn` or `edit protocols evpn` hierarchy.

[See Changing Duplicate MAC Address Detection Settings .]

What's Changed in Release 21.2R1

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Authentication and Access Control

- **Command to automate SSH key-based authentication (ACX Series, PTX Series, and QFX Series)**—You can set up SSH-key based authentication between the network device and a remote host by issuing the `request security ssh password-less-authentication` operational mode command. When you execute the command with the appropriate options, the device generates SSH keys for the current user, provided the user does not already have existing keys, and transfers the user's public key to the **authorized_keys** file of the specified user on the remote host.

    [See request security ssh password-less-authentication.]

General Routing

- **Enhancement to the show chassis pic command (Junos OS Evolved)**— You can now view additional information about the optics when you run the `show chassis pic` command. The output now displays the following additional field:

    MSA Version: Multi-source Agreements (MSA) version that the specified optics is compliant to. Values supported are: SFP+/SFP28 — SFF-8472 (versions 9.3 - 12.3), QSFP+/QSFP28 — SFF 8363 (versions 1.3 - 2.10), and QSFP-DD — CMIS 3.0, 4.0, 5.0.

    Previously, the `show chassis pic` command did not display this additional field.

    [See show chassis pic.]

- **Enhancement to the default remnant-holdtime (Junos OS Evolved platforms: ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, and QFX5220)**— Starting this release, the default `remnant-holdtime` has been increased from 180 seconds to 300 seconds. This provides sufficient time for protocols to start and sync routes from neighbors in a scaled environment, during rpd restart. You can configure `remnant-holdtime` at the `edit routing-options forwarding-table` hierarchy level.

  [See forwarding-table.]

- **Mozilla certification authority (CA) certificates removed (ACX Series, PTX Series, and QFX Series)**—To minimize security risks, Junos OS Evolved no longer includes Mozilla's set of root certificates from various CA operators by default. To use Docker container images from a registry that requires TLS authentication, you must first save the image as a tar archive on a remote device and then import the contents of the archive on the device running Junos OS Evolved.

  [See Running Third-Party Applications in Containers..]

Junos XML API and Scripting

- **Changes to how command-line arguments are passed to Python op scripts (ACX Series, PTX Series, and QFX Series)**—When the device passes command-line arguments to a Python op script, it prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device prefixes a single hyphen (-) to all argument names.

  [See Declaring and Using Command-Line Arguments in Op Scripts.]

- **The `language python` statement is enabled by default (ACX Series, PTX Series, and QFX Series)**—The `language python` statement is configured by default in the `junos-defaults` configuration group on devices running Junos OS Evolved. Thus, you can execute unsigned Python scripts using the default Python version without explicitly configuring the statement on the device.

  [See Requirements for Executing Python Automation Scripts on Devices Running Junos OS.]

Network Management and Monitoring

- **Changes to how command-line arguments are passed to Python action scripts (ACX Series, PTX Series, and QFX Series)**—When a custom YANG RPC invokes a Python action script and passes command-line arguments to the script, the device prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device passes the unmodified argument names to the script.

  [See Creating Action Scripts for YANG RPCs on Devices Running Junos OS and Displaying Valid Command Option and Configuration Statement Values in the CLI for Custom YANG Modules.]

- **Changes to `<commit>` RPC responses in RFC-compliant NETCONF sessions (ACX Series, PTX Series, and QFX Series)**—When you configure the `rfc-compliant` statement at the `[edit system services netconf]` hierarchy level, the NETCONF server's response for `<commit>` operations includes the following changes:

  - If a successful `<commit>` operation returns a response with one or more warnings, the warnings are redirected to the system log file, in addition to being omitted from the response.

  - The NETCONF server response emits the `<source-daemon>` element as a child of the `<error-info>` element instead of the `<rpc-error>` element.

  - If you also configure the `flatten-commit-results` statement at the `[edit system services netconf]` hierarchy level, the NETCONF server suppresses any `<commit-results>` XML subtree in the response and only emits an `<ok/>` or `<rpc-error>` element.

  [See Configuring RFC-Compliant NETCONF Sessions.]

- **Changes in contextEngineID for SNMPv3 INFORMS (ACX Series, PTX Series, and QFX Series)**— Now the contextEngineID of SNMPv3 INFORMS is set to the local engine-id of Junos OS devices. In earlier releases, the contextEngineID of SNMPv3 INFORMS was set to remote engine-id.

  [See SNMP MIBs and Traps Supported by Junos OS.]

Platform and Infrastructure

- **The `jcs:invoke()` function supports suppression of root login and logout events in system log files for SLAX event scripts (ACX Series, EX Series, MX Series, PTX Series, QFX Series, and SRX Series)**—The `jcs:invoke()` extension function supports the `no-login-logout` parameter in SLAX event scripts. If you include the parameter, the function does not generate and log UI_LOGIN_EVENT and UI_LOGOUT_EVENT messages when the script logs in as root to execute the specified remote procedure call (RPC). If you omit the parameter, the function behaves as in earlier releases in which the root UI_LOGIN_EVENT and UI_LOGOUT_EVENT messages are included in system log files.

  [See invoke() Function (SLAX and XSLT).]

Known Limitations

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Learn about known limitations in Junos OS Evolved Release 21.2R2 ACX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online Junos Problem Report Search application.

General Routing

- When inserting 40G optics which has the existing link, the LED of this 40G port shows green first, then the port LED shows amber and green. This is because TX_ENABLE is set by default for this optics. When the optics is out of reset after being inserted, the laser is turned on, so the port is up. Then after two seconds, the laser is turned off for serdes init, and the laser is turned on after serdes init is complete. The optics module firmware cannot be changed, and the design has no issue. This must be a product limitation. PR1565723

Open Issues

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- General Routing | 7

Learn about open issues in Junos OS Evolved Release 21.2R2 for ACX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online Junos Problem Report Search application.

General Routing

- On the ACX7100-48L platforms running Junos OS Evolved, you cannot clear or reset the disk option specified in the scheduled request node reboot command. The node reboots with the disk option last specified. PR1517596

- In Junos OS Evolved 21.1R1, BFD is not supported for ACX7100. The error message **Invalid RPC request key: 0x000a0000** is seen when BFD is configured and the respective BFD session comes up. PR1552436

- 400G DAC could not come up between ACX7100-32C and ACX7100-48L. ACX7100-32C uses vendor's PHY, ACX7100-48L uses another vendor's ASIC. When connecting ACX7100-32C to ACX7100-48L with 400G DAC, auto-negotiation and link training between these 2 vendors have issues, that results in link failure. PR1560431

- 4x400G FPC is supported only FPC Slot 1 and FPC slot 5. 4x400G FPC plugged into any slot would bring FPC online, but links will comeup only in FPC1 and FPC5. Plugged into not supported slot - will not allow FPC to come online and alarm will be raised. 16x100G FPC, 20xSFP56 FPC, 4x400G FPC - they are not supported in FPC slot 8(9th slot). Not bringing these board online and raise alarm. PR1582183

- A restart of DHCP takes more time because of internal issues with the SIGTERM event. PR1610229

Resolved Issues

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Learn about the issues fixed in these releases for ACX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: 21.2R2

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General Routing

- Few streams might observe 8-9 seconds traffic drop during ECMP member link flap. PR1573295

- Peer interfaces are showing up and LEDs are glowing during device reboot for DAC connections. PR1574342

- High CPU seen mostly with systemd with 4000 MAC VRF instances activate or deactivate. PR1581283

- PICD restart or crash might result in junks statistics for carrier transition. PR1594253

- The evo-pfemand might crash after restarting app evo-pfemand. PR1594331

- SyncE feature does not work in 4x10G in ACX7100-32C. PR1595487

- A few LSI MAC's are not properly learnt in the software with 8000 VPLS instance scale. PR1597125

- On ACX7100 platform, no MAC address is present in the Ethernet table but ARP is present in the system. PR1597277

- The arpd and ndp daemon crash is observed in scale setups. PR1598217

- The egress access control list (ACL) actions are skipped for BUM (Broadcast, Unknown Unicast, and Multicast) traffic and does not hit. PR1598489

- The ARPs (Address Resolution Protocol) might not be resolved on the IRB (integrated routing and bridging) interface which is replaced by another IRB interface. PR1600209

- For ACX7100-32C and ACX7100-48L the **Voltage Threshold Crossed** alarm might be observed sometime. PR1601493

- On performing `request system snapshot`, the snapshot message is not captured in /etc/motd file. PR1618946

- On ACX7100-32C or ACX7100-48L, the CLI `show system firmware` some times might show current firmware version for FPC 0 as blank. PR1618949

- On ACX7100-32C, the IPv6 NDP configured on IRB does not get updated with the new Layer 2 interface even after changing the Layer 2 interface through configuration. PR1602894

User Interface and Configuration

- The mgd process might crash after performing the commit check. PR1593192

- The `file copy` command does not accept HTTPS URIs. PR1596881

Resolved Issues: 21.2R1

General Routing

- ACX7100-32C :: **Invalid RPC request key: 0x000a0000** error messages seen in**/var/log/messages**. PR1552436

- Incorrect **Active defect** alarm generated when local or remote fault is inserted. PR1554852

- The device NMI watchdog starts after USB scratch install completes and we wait for the user action to reboot, resulting in a system exception. PR1555142

- ACX7100-32C : Interface : 400G DAC link does not come up between ACX7100-32C and ACX7100-48L. PR1560431

- [timing] [ptp] - ACX7100-48L TC - T1 time error and 2-way CTE does not meet Class C metrics for links for 100G-in and 40G-out combination. PR1562699

- Continuous interface MAC change on the neighbor switch results in evo-pfemand running at high CPU and never returns to the normal state. PR1564137

- ACX7100 : In multicast route extensive output does not show proper packet rate in pps for any multicast routes. PR1566475

- IRB logical interface does not get created after a sequence of events. PR1565842

- On ACX7100-48L and ACX7100-32C platforms, when a large amount of ARP resolutions happen on IRBs in a very short time, the ARPD process usage can shoot to 100%. PR1568206

- ACX7100-48L supports **Host 0 RTC battery error alarm** in case of RTC failure. PR1568440

- ACX7100-48L :IPv6 ping does not work, when strict uRPF is enabled. PR1568938

- ACX7100-48L: Router should not boot up with USB installation again after selecting the second option **Type 'reboot' and hit <return>** to complete the installation. PR1571930

- ACX7100-32C : :: mismatch in the snapshot recovery steps displays message in Junos OS Evolved 21.1R1. PR1578556

- ACX7100 - Evo-pfemand can crash on deactivating interfaces, VLANs and protocols in scaled setup with ECMP routes. PR1580565

- PICD restart or crash results in junks stats for carrier transition. PR1594253

- The evo-pfemand might crash after restarting app evo-pfemand. PR1594331

- SyncE feature does not work in 4x10G in ACX7100-32C. PR1595487

Infrastructure

- ToS of self-initiated packets might get changed unexpectedly. PR1578247

Routing Policy and Firewall Filters

- Syslog as an action of filter by default dump logs in syslog in Junos OS Evolved which is different from Junos OS. PR1564088

Routing Protocols

- Multipath information displayed for BGP route even after disabling the interface for one path. PR1557604

User Interface and Configuration

- The Junos OS Evolved operational state is incorrect on the system and CoS schedulers configuration change might not take effect.PR1536615

Junos OS Evolved Release Notes for PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 Devices

IN THIS SECTION

These release notes accompany Junos OS Evolved Release 21.2R2 for PTX10001-36MR, PTX10003, PTX10004, PTX10008, and PTX10016 Packet Transport Routers. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

What's New

IN THIS SECTION

Learn about new features introduced in these releases for PTX Series Routers.

What's New in 21.2R2

The following sections highlight the key features in this release.

Hardware

- The PTX10016 is supported on Junos OS Evolved Release 21.2R2. See Feature Explorer for the full list of supported features.

  Support for New PTX10016 Router Configurations—In Junos OS Evolved Release 21.2R2, we introduce the following new configurations of the PTX10016 router that support JNP10016-SF3 switch interface board (SIB):

  - PTX10016-BASE3

  - PTX10016-PREM2

  - PTX10016-PREM3

  The new SIB provides higher routing capacity and support for the PTX10K-LC1201-36CD and PTX10K-LC1202-36MR line cards.

  We also introduce a new front door (JNP10016-FRNT-PNL) that supports side EMI deflectors and a new rack mount kit (JNP10004-RMK-4POST).

  To install the PTX10016 router hardware and perform initial software configuration, routine maintenance, and troubleshooting, see PTX10016 Packet Transport Router Hardware Guide. See Feature Explorer for the complete list of features for any platform. See PTX10016 Switch Fabric for more information about the SIBs. See PTX10016 Components and Configurations for more information about the router configurations.

Table 1: Features Supported on PTX10016 Devices

Feature	Description
Class of Service (CoS)	Support for CoS features includes classifiers (behavior aggregate (BA), fixed, and multifield (MF)) rewrite rules, forwarding classes, loss priorities, transmission scheduling, rate control, and drop-profiles. [See CoS Features and Limitations on PTX Series Routers.]
Interfaces and Chassis	• Support for redundant power supply includes environment monitoring. Use the `request chassis fpc` command to override the default power budget for an FPC line card. The SFBs have a higher priority over the line cards for power allocation. [See Managing Power and fpc command (PTX Series).]

	• Fabric manager support for:
	
	  • PFE
	
	  • PTX10K-LC1201-36CD line card
	
	  • CCL link training and error handling
	
	  • fabric statistics collection
	
	  • RE switchover handling for SIB, and reduced SIB initialization time.
	
	[See PTX-10016 System Overview.]
	
	• Support for chassis to run with one or two RCBs. [See PTX10016 Routing and Control Board Components and Descriptions.]

Table 1: Features Supported on PTX10016 Devices *(Continued)*

Feature	Description
Licensing	You need a license to use the software features on the PTX10016 devices. [To find out the features supported on this device, see PTX10016 Routers Support for the Juniper Flex Program . To add, delete, and manage licenses, see Managing Licenses.]
Services and Applications	Support for the following functionalities: • IPv4 and IPv6 support for gateway [See Protocol-Independent Routing Properties User Guide and BGP User Guide.] • IPv4 and IPv6 inline flow monitoring. [See Understanding Inline Active Flow Monitoring.]
	• Tunneling for MPLS over UDP packets over RSVP LSPs and CSC, MPLS over Dynamic GRE with dynamic scaling option for number of tunnels up to 256K. [See Configuring a Next-Hop-Based Dynamic GRE Tunnels.] • Dynamic next-hop tunnel localization and dynamic GRE Tunnel creation based on new IPv4-mapped-IPv6 next-hops. [See Next-Hop-Based Dynamic Tunnel Localization Overview.] • Dynamic next-hop tunnel statistics reporting. [See Overview of Junos Telemetry Interface.] • BGP Signaling for MPLS over UDP and MPLS over GRE tunnels. [See Configuring MPLS over GRE.] • Mapping single IPv6 anycast address on multiple PFEs. [See get-route-range and IPv4 over IPv6.]

Table 1: Features Supported on PTX10016 Devices *(Continued)*

Feature	Description
Resiliency	• Platform resiliency support with logs, actions, faults, component recovery, and enhanced debugging capability for hardware failures. [See Understanding Chassis Alarms.] • Resiliency support for RCBs with fault-handling actions. [See PTX-10016 RCB Components.] • Fabric resiliency support for the PTX10K-LC1202-36MR line card (JNP10K-LC1202) for the links between FPCs. [See PTX-10016 Line Card Components.]

Authentication and Access Control

- **Support for SSH attributes (ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220)**—Starting in Junos OS Release Evolved 21.2R2, support for the follow SSH attributes is added at the `[edit system services ssh]` hierarchy level:

  - sftp

  - root-login

  - client-alive-count-max

  - client-alive-interval

  - max-sessions-per-connection

  [See Enabling Remote Access and File Access Services.]

High Availability

- **Support for VRRP (PTX10001-36MR and PTX10004)**—Starting in Junos OS Release Evolved 21.2R2, PTX10001-36MR and PTX10004 platforms support VRRP.

  [See Understanding VRRP.]

MPLS

- **Support for enhanced scaling for the following MPLS features (PTX Series)**—Starting in Junos OS Evolved Release 21.2R2, the following features have been enhanced to scale for better performance:

- RSVP transit LSPs with link and node protection

- RSVP ingress and egress LSPs with ultimate-hop popping (UHP) and penultimate-hop popping (PHP)

- LDP-over-RSVP LSPs

- Packet Forwarding Engine statistics

- Fast reroute (FRR) and make-before-break (MBB)

- Weighted ECMP

- Ping and traceroute

[See MPLS Applications User Guide.]

Network Management and Monitoring

- **SNMP support for LACP and LAG MIB Objects** (PTX10001-36MR and PTX10008)

    [See Enterprise-Specific MIBs for Junos OS Evolved and SNMP MIB Explorer.]

What's New in 21.2R1

To view other features supported on the PTX platforms, view the Feature Explorer using the following links. To see which features were added in the Junos OS Release Evolved 21.2R1 and earlier releases, click the Group by Release link. You can collapse and expand the list as needed.

- PTX10001-36MR

- PTX10003

- PTX10004

- PTX10008

What's Changed

Learn about what changed in these releases for PTX Series Routers.

What's Changed in Release 21.2R2

Learn about what changed in this release for PTX Series routers.

EVPN

- **Minimum auto-recovery time reduced for duplicate MAC address detection (ACX Series, PTX Series and QFX Series)**—Junos OS has changed the minimum value allowed for auto-recovery time for duplicate MAC address detection from 5 minutes to 1 minute. The auto-recovery time is the length of time that the device suppresses a duplicate MAC address. Reducing the auto-recovery time allows customers to quickly recover from a MAC address duplication state. You configure the `auto-recovery-time` option under the `duplicate-mac-detection` statement at the `edit routing-instances routing-instance-name protocols evpn` or `edit protocols evpn` hierarchy.

  [See Changing Duplicate MAC Address Detection Settings .]

General Routing

- **Enhancement to the request system license add terminal command (PTX10001-36MR)**— When you run the `request system license add terminal` command. You can now view following additional fields for information: `JUNOS564022985: Ignoring unknown feature` .

  [See Managing vMX Licenses.]

  .

Layer 2 Features

- **New Commit check for Layer 2 Interfaces (PTX10003)**—We've introduced a commit check to prevent you from misconfiguring ethernet encapsulation on Layer 2 interfaces. Ethernet encapsulation is not supported on Layer 2 interfaces.

  [See encapsulation (Logical Interface) and Layer 2 Address Learning and Forwarding Overview.]

Software Licensing

- **Juniper Agile Licensing (PTX10003, PTX10016, QFX5130-32CD, and QFX5220)**—Starting from this release onwards, the Juniper Agile License Manager is deprecated. You can use the Juniper Agile Licensing Portal to activate, install, manage, and monitor licenses on Juniper Networks devices.

  [See Juniper Agile Licensing Guide.]

What's Changed in Release 21.2R1-S2

IN THIS SECTION

Network Management and Monitoring

- **SNMP support for MIB**—Operational command `show snmp mib walk system` now shows the latest software version and doesn?t show the build date.

  [See show snmp mib.]

What's Changed in Release 21.2R1

Authentication and Access Control

- **Command to automate SSH key-based authentication (ACX Series, PTX Series, and QFX Series)**—You can set up SSH-key based authentication between the network device and a remote host by issuing the `request security ssh password-less-authentication` operational mode command. When you execute the command with the appropriate options, the device generates SSH keys for the current user, provided the user does not already have existing keys, and transfers the user's public key to the **authorized_keys** file of the specified user on the remote host.

  [See request security ssh password-less-authentication.]

General Routing

- **SSH session connection limit and rate limit per connection (PTX Series and QFX Series)**—We have introduced SSH `connection-limit` and `rate-limit` options at the `edit system services ssh` hierarchy levels to enable SSH connection limit and rate limit per connection. The default connection limit value is 75 connections and there is no default value associated with rate limit.

- **Secure boot disabled alarm is raised (PTX10008)**—The `Secure boot disabled` alarm is raised when the system boots with secure boot disabled in bios.

- **Fault alarm generated for feed failure on a DC power supply (PTX10008)**-A fault alarm is generated when only one of the feeds on a DC power supply (A0 and B0 or A1 and B1) is faulty.

- **Enhancement to the show chassis pic command**— You can now view additional information about the optics when you run the `show chassis pic` command. The output now displays the following additional field:

MSA Version: Multi-source Agreements (MSA) version that the specified optics is compliant to. Values supported are: SFP+/SFP28 — SFF-8472 (versions 9.3 - 12.3), QSFP+/QSFP28 — SFF 8363 (versions 1.3 - 2.10), and QSFP-DD — CMIS 3.0, 4.0, 5.0.

Previously, the `show chassis pic` command did not display this additional field.

[See show chassis pic.]

- **Maximum Transmission Unit (MTU) Support (PTX10001-36MR, PTX10008 and PTX10004)**—MTU 16KB is only for transiting traffic of WAN interfaces. MTU is 9500B for protocols and 16KB for transit traffic.

  [See mtu.]

- **Enhancement to the show interfaces (Aggregated Ethernet) command (PTX Series and QFX Series)**— When you run the `show interfaces extensive` command for aggregated Ethernet interfaces, you can now view following additional fields for MAC statistics : Receive, Transmit, Broadcast and Multicast packets.
  [See show chassis pic.]

- **Enhancement to the default `remnant-holdtime` (Junos OS Evolved platforms: ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, and QFX5220)** —Starting this release, the default `remnant-holdtime` has been increased from 180 seconds to 300 seconds. This provides sufficient time for protocols to start and sync routes from neighbors in a scaled environment, during rpd restart. You can configure `remnant-holdtime` at the `edit routing-options forwarding-table` hierarchy level.

  [See forwarding-table.]

- You can enter **zero suppression no-zero-suppression** at the **edit services analytics** hierarchy level.to disable zero suppression for gRPC-based sensors. When this feature is enabled, data for a sensor is sent to the collector if the sensor value is zero. All key value pair updates will be streamed to a collector without performing any zero suppression. To enable zero suppression again (the default), delete the configuration by entering #delete services analytics zero-suppression no-zero-suppression. Whenever this feature is set or deleted, any existing collector is disconnected

- **Mozilla certification authority (CA) certificates removed (ACX Series, PTX Series, and QFX Series)**—To minimize security risks, Junos OS Evolved no longer includes Mozilla's set of root certificates from various CA operators by default. To use Docker container images from a registry that requires TLS authentication, you must first save the image as a tar archive on a remote device and then import the contents of the archive on the device running Junos OS Evolved.

  [See Running Third-Party Applications in Containers..]

Interfaces and Chassis

- **Fabric OAM is disabled by default (PTX10003-80C and PTX10003-160C)**—We've disabled the fabric Operation, Administration, Maintenance (OAM) feature, which helps in detecting failures in fabric paths. This release does not support disabling this feature by using the `set chassis fabric oam detection-disable`. In Junos OS Evolved Release 20.4R1, the fabric OAM feature was enabled by default.

  [See Error Handling by Fabric OAM.]

Junos XML API and Scripting

- **Changes to how command-line arguments are passed to Python op scripts (ACX Series, PTX Series, and QFX Series)**—When the device passes command-line arguments to a Python op script, it prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device prefixes a single hyphen (-) to all argument names.

  [See Declaring and Using Command-Line Arguments in Op Scripts.]

- **The `language python` statement is enabled by default (ACX Series, PTX Series, and QFX Series)**—The `language python` statement is configured by default in the `junos-defaults` configuration group on devices running Junos OS Evolved. Thus, you can execute unsigned Python scripts using the default Python version without explicitly configuring the statement on the device.

  [See Requirements for Executing Python Automation Scripts on Devices Running Junos OS.]

- **Python 3 add-on modules (PTX Series)**—Junos OS Evolved includes additional Python 3 libraries and modules, which Python scripts can import and use.

  [See Overview of Python Modules on Devices Running Junos OS.]

Network Management and Monitoring

- **Changes to `<commit>` RPC responses in RFC-compliant NETCONF sessions (ACX Series, PTX Series, and QFX Series)**—When you configure the `rfc-compliant` statement at the `[edit system services netconf]` hierarchy level, the NETCONF server's response for `<commit>` operations includes the following changes:

  - If a successful `<commit>` operation returns a response with one or more warnings, the warnings are redirected to the system log file, in addition to being omitted from the response.

  - The NETCONF server response emits the `<source-daemon>` element as a child of the `<error-info>` element instead of the `<rpc-error>` element.

- If you also configure the `flatten-commit-results` statement at the `[edit system services netconf]` hierarchy level, the NETCONF server suppresses any `<commit-results>` XML subtree in the response and only emits an `<ok/>` or `<rpc-error>` element.

[See Configuring RFC-Compliant NETCONF Sessions.]

- **Changes to how command-line arguments are passed to Python action scripts (ACX Series, PTX Series, and QFX Series)**—When a custom YANG RPC invokes a Python action script and passes command-line arguments to the script, the device prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device passes the unmodified argument names to the script.

[See Creating Action Scripts for YANG RPCs on Devices Running Junos OS and Displaying Valid Command Option and Configuration Statement Values in the CLI for Custom YANG Modules.]

- **Changes in contextEngineID for SNMPv3 INFORMS (ACX Series, PTX Series, and QFX Series)**— Now the contextEngineID of SNMPv3 INFORMS is set to the local engine-id of Junos OS devices. In earlier releases, the contextEngineID of SNMPv3 INFORMS was set to remote engine-id.

[See SNMP MIBs and Traps Supported by Junos OS.]

Platform and Infrastructure

- **The `jcs:invoke()` function supports suppression of root login and logout events in system log files for SLAX event scripts (ACX Series, EX Series, MX Series, PTX Series, QFX Series, and SRX Series)**—The `jcs:invoke()` extension function supports the `no-login-logout` parameter in SLAX event scripts. If you include the parameter, the function does not generate and log UI_LOGIN_EVENT and UI_LOGOUT_EVENT messages when the script logs in as root to execute the specified remote procedure call (RPC). If you omit the parameter, the function behaves as in earlier releases in which the root UI_LOGIN_EVENT and UI_LOGOUT_EVENT messages are included in system log files.

[See invoke() Function (SLAX and XSLT).]

Services Applications

- Changes to inline active flow monitoring (PTX Series)—When you use inline active flow monitoring, no flows are maintained. Every sampled packet is considered to be a flow. When the sampled packet is received, the flow is created and immediately timed out as inactive, and the software exports a record to the collector. Therefore, the number of records sent to the collector is higher than before. The IPFIX and version 9 Options Template Data Record now contains 0 in the `Flow Active Timeout` (IE 36) and `Flow Inactive Timeout` (IE 37) fields. Therefore, the Options Template Data Record is not compliant with IPFIX RFC 7011. We do not recommend that you configure the `nexthop-learning` statement at the `[edit services flow-monitoring version` *version* `template` *template-name*`]` hierarchy level, as

it reduces the number of packets that can be processed. The `show services accounting flow inline-jflow fpc-slot` *slot* operational mode command now displays 0 for all of the `Active Flows` and `Timed Out` fields. The various `Total Flows` fields are now equal to their respective `Flow Packets` fields. The various `Flows Inactive Timed Out` fields are now equal to their respective `Flow Packets` fields.

[See Understanding Inline Active Flow Monitoring.]

Known Limitations

Learn about known limitations in Junos OS Evolved Release 21.2R2 for PTX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online Junos Problem Report Search application.

General Routing

- The PTP FPGA is kept in reset during BIOS boot. During Linux boot, the PTP FPGA is taken out of the reset and pcie-tree is reenumerated. Hence you might see the link up or down during this sequence. PR1572061

- If you offline multiple SIBs and halt the primary Routing Engine, the SIBs might be stuck in the offline state for 15 minutes, before it goes to the offline state. PR1584712

- If a 400G ZR link is configured with 4x100GE channelized mode on one end and 1x400GE on the other end, it results in link status mismatch. The 1x400GE port reports up incorrectly when it is in fact down and the 4x100GE port reports down. PR1597707

- With bidirectional 400 Gbps line rate traffic, the SIB offline/online reports `sm_sch_dat_intr_oresource_drop (0x4300c9)` interrupt. The alarm might not to be seen if the interrupt is recategorized to `Minor` for BT-based systems. PR1603241

- Ungraceful FRU removal results in CRC errors on the peer FRUs, which might potentially wedge the Packet Forwarding Engines. PR1615297

Juniper Extension Toolkit (JET)

- GRPC on WAN port is not working. The libsi can only be linked with 64-bit binaries. To access data or WAN ports, you need to link libsi with the binary. By default, the shell on the device includes libsi, but it is not available to the CLI commands as the CLI will make mgd invoke cscript to run a Python script through CLI. PR1603437

MPLS

- If all the Routing Engines are not rebooted after a network service configuration change, the rpd process might crash. PR1461468

- There are several configuration changes added to address the scaling requirements to avoid prematurely timing out protocol session, adjacency, and routing forwarding plane convergence. PR1575188

Network Management and Monitoring

- The juise core files are generated while using request-system-storage-cleanup RPC with post method in HTTP. The root cause is due to a long list of file details sent by this RPC. PR1587337

- The `set system no-hidden-commands` configuration blocks the NETCONF sessions. As a workaround, you can disable the `no-hidden-commands`. PR1590350

Routing Protocols

- With IS-IS or BFD and RSVP on a link with link protection enabled, on PPMD restart, multiple BFD sessions might flap. PR1585644

Open Issues

Learn about open issues in Junos OS Evolved Release 21.2R2 for PTX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online Junos Problem Report Search application.

General Routing

- On all platform with BGP segment routing-traffic engineering (SR-TE), in a segment routing topology, the transit IPv4 traffic might miss labels and might get dropped in first hop, when the ingress forwards the traffic. It might miss all the labels except the last hop in the IPv4 traffic forwarded by the next hop interface. PR1505592

- The FPC core files get stuck in `/var/lib/ftp/in/`. Sometimes when core files from the multiple FPCs are dumped, core files from one FPC might get left behind in the `/var/lib/ftp/in` and are not processed by core-mgr. If the `show system core-dumps` shows some older core files in the `/var/lib/ftp/in/fpc-hostname/` and core files in the `/var/core/node-name` is newer, then it indicates this issue is hit. PR1522404

- GRES is not supported when the FPCs are restarted. PR1539685

- The `dp_xx_viqm_intr_req_enq_err` error might be observed intermittently in the logs and it can be safely ignored as it is observed mostly for a number of scenarios which does not have any service impact. Because of the design of the underlying silicon, this interrupt cannot be completely avoided which

does not have absolutely no service impact in almost all scenarios unless joined by a few other severe interrupts. PR1553943

- When an aggregated Ethernet link is brought down, the following transient error message appears: `[Error] Nexthop: EalNhHandler: failed to add Nh: xxxx, type: composite, as pil add failed`. There is no functional impact due to this error. PR1570710

- When the scheduler configuration is not applied to all 8 egress queues of an interface and one or more egress queues have the `buffer size remainder` configuration, the distribution of buffer to egress queues with buffer size remainder is not distributed correctly, which might lead to an unexpected tail drop. PR1575798

- On PTX10000 line of routers, CB slot becomes `Fault Standby` after issuing the `request node power-off re slot` command on the primary `re slot`. The correct CB state is offline. PR1581476

- If the input subscription paths contain a ":" character, the extension header in case of GNMI and certain fields for the `show network-agent statistics` command shows incorrect values. PR1581659

- When a switchover is performed at the time when the `protocol sync in progress`, there is a remote possibility that you might hit the `bgp_read_message:3261: NOTIFICATION sent to : code 1 (Message Header Error) subcode 2 (bad length) value 27395` error and session flaps. PR1589283

- Removing or adding nested firewall filter in lo0 sets/clear displays the following error: `Performing action log for error /fpc/0/evo-cda-bt/0/cm/0/btchip/0/filter_action_0_intr_pmv_eq_zero (0x4514e4) in module: btchip with scope: pfe category: functional level: minor`. PR1589296

- The ECMP tracer fails to count output packet on the aggregated Ethernet interface. PR1597038

- Brief multicast traffic loss is observed while performing Routing Engine switchover with GRES. PR1593810

- After configuring the `warm-standby` option, wait for 3 minutes before performing a Routing Engine switchover. PR1623601

- When all Packet Forwarding Engines go offline and are brought online with multicast route being active during this cycle, multicast traffic is lost permanently due to the absence of mcast route. PR1598894

- On PTX10008 platforms, ZTP fails on 40G WAN ports intermittently. PR1602131

- The sFlow ingress sampling reports incorrect OIF and next hop with user IPv6 traffic in an ECMP scenario at last hop router with the ultimate hop pop LSP.PR1602448

- On the PTX10008 platform, fan tray controller removal or absence alarm is not generated. PR1605987

- If rpd agent sends indirect next hop deletions or additions in out of order to backup rpd, the rpd generates core file. This is a backup rpd crash issue and does not impact any functionality. PR1607553

- In certain cases when an interface is deleted and the corresponding next hop is about to be deleted. At this point, rpd restarts or GRES happens, then the following error message is displayed: `RPD_KRT_KERNEL_BAD_ROUTE: krt unsolic client.: lost ifl 0 for route`. This does not have any functional impact. The error indicates that the rpd is replying the route whose next hop's interface is now delinked and linked to a local interface. PR1612487

- After system reboot or power cycle, a few fabric links showing init CRCs is expected with Gen 3 and Gen 5 fabric connectors. They do not indicate any issue as long as the CRC count is not incrementing with time. A higher corrected Tmax value after system reboot is not an indication of bad link. If you see links in FAULT or links showing incrementing CRCs after system reboot, do a graceful OIR of the affected FPC. PR1613214

- With Gen 3 fabric connectors, it is possible that a few fabric links come up in FAULT or show incrementing CRCs. Normally, this type of issue starts happening after a FPC/SIB reseat event. And it might continue even after FPC goes offline/online or system reboot. Do gracefully reseat of the affected FPC to recover from the issue. PR1613559

- After the FPC goes offline, minor cm-errors might occur for ZFI block on other FPCs. These errors can be cleared and does not affect system functionality. PR1616179

- The Routing Engine switchover silently, so the automatic switchover has been disabled by default. To enable it, use the `set chassis redundancy failover` command and to disable it again, use the `delete chassis redundancy failover`. If a user migrating from Junos OS to Junos OS Evolved, then it is possible that they will have the `chassis redundancy failover` configuration which is not operational in Junos OS Evolved, however we need to explicitly delete redundancy failover using the CLI. PR1617720

- MPLS family filters do not work when it is applied to passive monitoring interfaces. PR1620470

- Incorrect sensor modeling/mapping when using /junos/system/linecard/interface/ native telemetry streaming. PR1621037

- On a scaling system, load override and commit of baseline cfg cause the rpd to spin high on CPU. As GRPC configuration is removed, sensors need to be uninstalled. But, the rpd does not respond to these telemetry sensors uninstallation requests, so sensors uninstallation fails. Later, when GRPC is enabled back on box and the same sensor profile (cfg.json file used with jtimon) is requested from collector, the rpd sends packets with higher sequence numbers (because sensor was not removed from rpd earlier) and this is considered as drops by collectors which rely on sequence-numbers. PR1621347

- The `[Error] Nexthop: Egress NhChain: numOfTags is 2 and srteGlobalIndex is 0` error is not seen until there is a composite next hop with 2 labels in it. There is no impact in behavior and flow of traffic with these errors. PR1621689

- The CDA application crashes as soon as FPC booted up resulted in not publishing pfeE object. Hence fabricPfeE objects are not created or deleted. SIB endpoints cleanup are dependent on the deletion of fabricPfeE objects. Stale SIB fabric endpoints prevent fabric link bring up in further FPC reboots. PR1624765

Flow-based and Packet-based Processing

- Unable to execute /usr/sbin/picinfo. Bad file descriptor found when the `clear services inline-monitoring statistics` command is issued. PR1624094

Infrastructure

- When using a source IP address as the management interface with the RPF check set to strict on the interface, the response for the ICMP ping from the peer on the management interface is dropped by the Linux kernel as it expects the path to the peer to be on the WAN side. PR1498255

- The GRES triggered using the `request chassis routing-engine master switch` command shows the following connector driver overlay message: `{master} user@host> [ 1185.081257] gpio-jnx-i2cs gpio-jnx-i2cs.50: Asserting power_status irq 59 [ 1185.125182] OF: overlay: overlay_is_topmost: #9 clashes #10 @/ftc0/i2c-bus/i2cs@54/fan_hwmon [ 1185.125183] OF: overlay: overlay #9 is not topmost.` PR1539232

Interfaces and Chassis

- The licenses used value for the Port Bandwidth Usage (PAYG) field under the `show system license` does not update when new interfaces are created. In order to correct the value, the IFMAND process needs to be restarted to invoke a refresh. PR1595179

- If the marvd daemon restarted for any reason, the device becomes unreachable because of PCI uncorrectable non-fatal AER errors getting generated and the system reboots without any core file. It happens when the marred crashes. PR1600870

Juniper Extension Toolkit (JET)

- In a network where there are high packet drops, if the peer end (grpc collector or client) gets closed, the TCP sessions are held in an established state in the device. PR1592542

MPLS

- If you configure LDP auto-targeted session after establishing IGP paths, it fails to establish an expected backup MPLS paths. PR1620262

Network Management and Monitoring

- When two trap groups are configured with the same trap destination address, snmpd process sends trap using only the first trap-group (community). PR1623201

Routing Protocols

- The default remnant hold time is 300 seconds which is not sufficient for this scale (1.7M FIB routes, 37,000 LSPs, and jFlow enabled). You need to increase the hold time to 600 seconds to avoid any protocol flap during the rpd crash or restart. Use the `set routing-options forwarding-table remnant-holdtime 600` to set the hold time. PR1593445

- Traffic loss is observed on BGP-LU paths after restoring primary paths in setup with IGP/LDP RLFA enabled. PR1619229

User Interface and Configuration

- When a user tries to deactivate the MPLS related configuration, the commit fails on the backup Routing Engine. PR1519367

Resolved Issues

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- Resolved Issues: 21.2R1 **|** **36**

Learn about the issues fixed in these releases for PTX Series Routers.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: 21.2R2

Authentication and Access Control

- Root password might not be accepted under su on the Junos OS Evolved platforms. PR1607861

Class of Service (CoS)

- MPLS fixed classifiers might not work on Junos OS Evolved platforms. PR1616492

General Routing

- The mpls-label is not reaped out when configured for segment routing SID ingress sensors. PR1516811

- With multiservices scaled configuration and Junos telemetry interface monitoring running after routing restart, protocols or services remain down and rpd does not respond or recover. PR1520977

- On PTX10003 routers, global port mirroring applied with deactivation does not display XML correctly. PR1529413

- Huge invalid statistics shown in the `show interface statistics` output when an interface is removed and added from an aggregated Ethernet bundle. PR1575623

- MTU changes cause interface to flap multiple times. PR1576199

- On the PTX10008 platforms, after FPC restart, static MACs configured over aggregated Ethernet does not get programmed in forwarding causes flooding of the traffic. PR1581325

- On the PTX10004 platforms, after disabling active path, forcing FRR shows large traffic loss and increased irp.core.trapcode.cfg_err counter. PR1582170

- Packet loss might be seen during global repair of FRR. PR1586122

- The error message `RPD_KRT_KERNEL_BAD_ROUTE` is seen on certain scenarios when rpd restarts or GRES when NSR is enabled. PR1586466

- The Junos Telemetry Interface leaves such as `used-power` and `allocated-power` under or components do not reflect correct values. PR1587184

- On PTX10008 platforms, error or warning message appears when you issue the `request chassis cb slot 1 offline` command before the node goes offline. PR1589433

- Traffic loss might be observed on global repair after disabling the active path forcing FRR. PR1589803

- On PTX10008 platforms, the Packet Forwarding Engine might get stuck in ready state with anomalies type net::juniper::fabric::fabricPfeE. PR1590319

- The duplicate Junos telemetry interface leaf of `oper-status` for logical interface index 16386 has mismatch value. PR1592468

- The firewall filter might not take into effect on Junos OS Evolved PTX Series platforms. PR1592500

- After Routing Engine switchover, the following error messages are seen: `JexprSlowCntrRead - Unable to get the plct Inst for pfeIdx: 255, User-type: OVFM_OFFCHIP_NEXTHOP_CNTR` .PR1593079

- The rpdagent crashes on the primary Routing Engine after multiple GRES with GR and NSR enabled. PR1593104

- The port mirroring instance might be down on Junos OS Evolved based platforms. PR1593276

- Load balance might not take effect for the Layer 2 VPN traffic on the PTX10008 platforms. PR1593548

- The evo-pfemand might crash after restarting app evo-pfemand. PR1594331

- The BFD session for MPLS LSP goes down after enabling ultimate-hop-popping. PR1594621

- The `type` leaf value for `FPC3:PIC0:PORT0:XcvrX` displays XCVR. PR1595103

- On PTX10008 platforms, application error alarms and trace-writer core files are generated due to defunct rcp zombie. PR1595409

- Layer 2 VPN stops forwarding when interface encapsulation is changed to `vlan-ccc` from `ethernet-ccc` and back. PR1595455

- Some TCP sessions might not be established after performing the `request system snapshot` command. PR1595470

- On PTX10008 platforms, default wavelength for 400G ZR module is incorrect. PR1595498

- The applications might crash if the publishing parent objects linked child objects are published by different applications. PR1595846

- Telnet service might be enabled when it is expected to be disabled. PR1596411

- On 400G ZR, logical interface creation fails after adding or deleting invalid speed configuration. PR1597022

- The following error message is observed: `cannot find ifToken for counterType:12`. PR1597355

- The aftmand core file might be observed on all Junos OS Evolved platforms. PR1597649

- Major host 13 Ethernet interface link down false alarm is seen after Routing Engine 1 replacement manually. PR1597763

- On PTX10001-36MR routers, inconsistency in the platform name used in multiple places like version, SNMP MIBs, and so on. PR1597999

- Master-only IP address keeps in old master (new backup) and device becomes inaccessible after Routing Engine switchover. PR1598173

- Due to issue in AGEOUT notification for inline sessions, sessions remain up till the peer sends BFD down packet or BFD client brings it down. PR1599257

- FTC status LED and SIB power LED are unlit or off on PTX10008 platforms. PR1600178

- The `config interface ip remove` command does not work correctly. PR1600932

- On PTX10008 routers, the `set chassis redundancy routing-engine 1 master` command does not change the default Routing Engine election priority. PR1601430

- On PTX10008 routers, AFTMAN core files are seen at jexpr_if_logical_l2d_alloc while powering off or on all the Packet Forwarding Engine across all the FPCs. PR1602035

- On PTX10003 platform, IRB ping fails post power off or power on underlying Packet Forwarding Engine for aggregated Ethernet child member. PR1602181

- Enable support for the `no-auto-virtual-gateway-esi` and `virtual-gateway-esi`. PR1602224

- GRE keepalive packet with recursion control bit set gets dropped on PTX10003 platforms. PR1602353

- Continuous FPC restart might be observed on Junos OS Evolved platforms with the firewall policer configuration. PR1602446

- On PTX10008 routers, powering off Packet Forwarding Engines displays the following error message: `Jexpr: deleteFdbEntry: Null`. PR1602670

- Software validation or upgrade might fail. PR1603479

- Junos OS Evolved release with IPv6 account, the `show interface ae0 extensive` shows large values for input bytes and input packets counters for IPv6 transit statistics PR1604075

- The following error message is observed: `evo-aftmand-bt[18089]: [Error] IfStats:map entry not present for ifl:1039`. PR1604334

- The channel 0 physical interface does not come up after adding the correct speed configuration. PR1604810

- Remote aggregated Ethernet member failures causing tail drops resulting in high traffic loss. PR1604823

- The host loopback wedge might be detected in the Packet Forwarding Engine when deleting the aggregated Ethernet bundle configuration. PR1605599

- The DNS lookup might fail on all the Junos OS Evolved platforms. PR1607505

- On PTX10008 platforms, defunct rcp increases due to transport-alarm-statsd daemon. PR1608776

- On PTX10008 platforms, the evo-aftmand-bt.fpc_x86_64 core file is seen @ jexpr_pile_malloc with LSR core profile configuration. PR1608999

- High priority queue might not get the expected bandwidth on the Junos OS Evolved platforms. PR1609823

- The `show pfe statistics` traffic does not show host bound traffic. PR1611115

- After picd restarts, the interface goes down in channelized 100G link. PR1611379

- On PTX10001-36MR , PTX10004, and PTX10008 platforms, IS-IS does not come up when network type is P2P for IRB interface. PR1612606

- Some of the fabric links might go into faulty state after swapping FPC LC1201 with LC1202. PR1612624

- Mitigate false wrap of drop statistics when physical interfaces move into or out-of an aggregated Ethernet while physical interface drops excess traffic. PR1613889

- On PTX10016 routers, SIBs and FPCs are not in active or online state after loading the image. PR1614489

- The CDA-BT core files are generated when you do an FPC offline. PR1615343

- On PTX10001-36MR routers, on performing the `request system snapshot`, the snapshot message is not captured in /etc/motd file. PR1618946

- InputIntf is reported incorrectly for MPLS IPv4 and MPLS IPv6 ingress sampling in case of Layer 3 VPN. PR1619052

- The hardware process might crash when an FPC is pulled out or some power failure or fault occurs for the FPC. PR1619102

- On PTX10008 routers, interface goes down while performing custom optics profile validation for low power mode in non-channelized mode. PR1624228

- On PTX10008 routers, the following continuous info level syslog messages are observed: `evo-aftmand-bt:Pfe:controller add for fru :controller modify for fru:fru power-on (block mode) for fryu:initiating online (block mode) for fru`. PR1624375

Infrastructure

- The FTP IPv6 server function might fail on all the Junos OS Evolved platforms. PR1591733

- The TCP-based protocol sessions might remain down after multiple Routing Engine switchovers. PR1593580

- The `Host 0 Active Disk Usage Exceeded` alarm might be generated due to a large number of files under /var/log/journal. PR1601251

- The `detail` and the `write-file` options for the `monitor traffic interface` CLI command are incompatible with each other when used simultaneously. PR1596188

- Malformed packets might be sent out on egress interfaces in Junos OS Evolved platforms. PR1603783

Interfaces and Chassis

- Traffic loss is seen after restarting the SIB. PR1560111

- The Junos telemetry interface optics sensor's alarm data type changed from `bool_val` to `str_val`.PR1580113

- The SIB might be stuck in offline state after performing offline and online operations. PR1591076

- The 25G interfaces with FEC91 go down on a few configurations. PR1594740

- On PTX10003-160C platforms, the interface is not programmed in routing-instance. PR1596768

- On PTX10003 platforms, the `show platform object-info` anomalies summary CLI command times out. PR1598337

- The LACP system priority might take a value of 0 and causes an LACP interoperability issue. PR1602724

- A few links on channelized interface is down after oir_enable and oir_disable in 4X25G. PR1606644

Routing Policy and Firewall Filters

- The dfwd-junos-relay core file is generated during switchover. PR1597853

- The firewalld might crash if you configure `fragment-offset` out of the range (fragment-offset range: 1-900000000000). PR1605805

User Interface and Configuration

- The `connection-limit` and `rate-limit` statements are not available under the `system services netconf ssh` hierarchy level. PR1562205

- The `no-persist-groups-inheritance` configuration is not supported. PR1575995

- System logs are not updated when a new user gets added or an old user is deleted after commit. PR1589858

- Post `request system zeroize` operation, the sshd service is not enabled by default due to a race condition on PTX10008 platforms. PR1594258

- The file copy command does not accept HTTPS URIs. PR1596881

- The `transfer-on-commit` configuration does not commit if you commit through NETCONF.PR1602331

Resolved Issues: 21.2R1

Class of Service (CoS)

- Applying non-configured traffic-control-profiles on the interface for the first time causes cosd crash. PR1571742

- Cosd core can be seen on issuing `run show class-of-service`. PR1580573

- The user-defined CoS might not get applied on the interface when you configure class-of-service stanza with `interface all`. PR1592900

EVPN

- Sometimes Broadcast, Unknown Unicast, and Multicast (BUM) traffic that comes through evpn-mpls tunnel gets dropped or duplicated when going out of aggregated Ethernet interface after tunnel termination when aggregated Ethernet members are spanned across multiple Packet Forwarding Engines. PR1578314

- EVPN missing option under routing-instances <> protocols. PR1581821

General Routing

- Ungraceful SIB failures results in transient loss of traffic. PR1497212

- VCCV type 1 connectivity verification is not supported. PR1503724

- Junos OS Evolved - The aggregated Ethernet interfaces do not display member links' statistic. PR1505596

- [Junos OS Evolved PTX10008] : DCDCEdge-VPNTunnelMulticastL3L2:serviceability :core file creation failure, aftmand core file is stuck at **/var/lib/ftp/in/**]. PR1522404

- The user might not be able login to PTX10001-36MR after multiple abrupt power cycles or reboots. PR1523238

- Traffic loss might be observed after rpd restart or GRES in a scaled MPLS scenario. PR1525710

- Set of info level no passwd entry cron logs displayed every 1 minute. PR1527266

- Global Port-Mirroring applied with deactivation does not display XML correctly for PTX10003. PR1529413

- FPC vmcore files can be stored at **/var/lib/ftp/in/fpc_slot/** on RE0 or RE1. PR1531214

- PTX10008: Need support for `show chassis fabric summary` output. PR1532163

- The interfaces might take longer to come up after loading baseline and rollback configuration. PR1534996

- The `show chassis alarms` should be redirected to `show system alarm`. PR1536020

- The port mirroring stops working for the FTI interface when GRE source is changed. PR1536223

- EXP rewrite might not take effect on the exposed label while performing PHP. PR1538918

- PTX10001-36MR : :: IP-in-IP: Routing Engine initiated traceroute packets do not use IP-in-IP encapsulation. PR1545049

- [ddos] [ddostag] PTX10001-36MR : `show ddos-protection protocols bgp statistics brief` throws error - **communication failure with /re0/evo-aftmand-bt/**. PR1547491

- The segment routing-traffic engineering (SR-TE) might stay in the Up state when the routes are deleted through policy. PR1547933

- The process aftmand might crash if you restart FPC or delete configuration. PR1548866

- The firewalld crash might be seen if deactivating or activating the firewall during back to back switchovers. PR1549856

- The backup Routing Engine should not clear the primary Routing Engine ARP entry. PR1550959

- Junos Evolved Ethernet MAC Address allocation is incorrectly distributed for FPCs. PR1552955

- jnxFruLastPowerOn value is incorrect for FPCs. PR1553924

- **CoS WRED Curve: Create Expr Curve: No curve data points!!** errors are seen when interpolate is configured under drop profile. PR1554220

- [pfe] [cos_installation] : PTX10008 PFC: Global Ethernet flow-control should be disabled when priority-based flow control (PFC) congestion notification profile (CNP) is enabled on an interface. PR1554345

- The output of `show interface queue` <> always shows **Forwarding classes: 16 supported, 4 in use** with customized configuration. PR1554370

- [ddos] [ddostag] Junos OS Evolved PTX10003 : :: Violations observed even after clearing the states and statistics. PR1554515

- [pfe] [pfe] PTX10008 : : The following error messages are seen **@Error] Jexpr: CoS Scheduler Express Handle: Destructor: Interface Physical Handle is NULL. streamIndex:1147 schedNodeToken:4508** while executing 2000 static SR-TE scale in PTX10008. PR1558328

- Junos OS Evolved:JDI_FT_REGRESSION:FIREWALL:PTX10003:FIREWALL:[firewall] [filter_installation] :: firewalld: anomolies are seen in firewalld app for publish publish-deleted. PR1559046

- Major alarms might be seen when a large class-of-service buffer-size is configured. PR1559459

- The `request system software sync all-versions` command might cause the CLI to hang. PR1560315

- PTX10008:NSR Support for LDP/RSVP/BGP: BGP NH_index (indirect and unilist) change after GRES +NSR trigger causes a momentary (unexpected) traffic loss. PR1560323

- The `request system software sync all-versions` command might cause the CLI to hang. PR1560315

- The class-of-service RED feature might work unexpectedly and cause traffic drop. PR1560495

- The FPC might reboot in a high-scale configuration scenario on Junos OS Evolved PTX10008 platforms. PR1560757

- Traffic drop might be seen after Packet Forwarding Engine restart. PR1560901

- Support switchover on routing-crash configuration statement during abnormal termination of rpd. PR1561059

- The pfe-disable action being taken due to 'viqm_intr_viqm_gs_deq_dry_err' interrupt. PR1561265

- Timingd-lc errors, **CdaExprClient: grpc api call ExprServerInfoGet failed" and "CdaExprClient: Failed to fetch server info error:5** seen on all FPCs after restarting the router or FPC restart. PR1561362

- Junos OS Evolved System - after recovering from restart routing immediately, object-info anomalies is observed on rpd agent. PR1561812

- PTX10008: After sync all followed by rollback and then reboot, RE1 booted on snapshot. PR1562189

- CPU utilization of evo-aftman process goes to 100% in a certain scenario on Junos OS Evolved PTX Series devices. PR1562328

- Complete ingress multicast traffic loss might be seen on interfaces that are flapped using Packet Forwarding Engine offine or online command. PR1562452

- The interface loopback might not work if there is no optics connected to the port on PTX10008. PR1562471

- For topologies involving high ingress and transit LSP scale on PTX10008 Junos OS Evolved platforms, error messages can be seen in journalctl when tearing down the ingress and transit LSPs. This leads to slow hardware resource leaks for the ASIC onchip memory associated with nexthops. PR1562503

- The aftmand crashes when sFlow is enabled on the loopback interface. PR1562869

- FPC is not be powered on using `request node power-on fpc`. PR1562981

- The ARP might not resolve and traffic might be dropped on Junos Evolved platforms. PR1563684

- PTX10008: RE0 goes into reboot loop continuously during validate restart (INDB unsupported). PR1563742

- It might take a long time to create physical interfaces after restarting the FPC. PR1564156

- The evo-cda-bt might crash in large scaled configuration scenario. PR1565427

- Improve `request system software delete` CLI command to add new option `archived` to delete all old software versions except current and rollback. PR1566173

- MACsec-Encrypted packets counter displays 0 under **Secure Association transmitted** of MACsec statistics output when AN rollovers with `sak-rekey-interval` configured. PR1566665

- Observed license-check core on RE-1 during runtime removal of CB[0] SAM FPGA from PCIe device. PR1567066

- The `request node halt re` does not work as expected when the Routing Engine is a primary Routing Engine. PR1567558

- Drop counts in `show interfaces voq ae0` might not match with `show interfaces queue` when `clear interface` command is issued while traffic flows. PR1567598

- User folders are not created when snapshot taken. PR1567880

- Junos OS Evolved:JDI_FT_REGRESSION:BGP:PTX10003 :: State is not established for `show bgp bmp < Station name>` post `authentication-key bmp-auth` configuration. PR1568046

- More memory usage may occurs in ndpd (NDP daemon). PR1568370

- Routes learned through IRB interface might not be reachable in IBGP setup. PR1568566

- The firewalld crash might be seen if GRES is executed as soon as the firewall is activated (for example, commit is done).PR1569427

- PTX10008: User script output should be logged during ZTP execution for determining failure in the logs. PR1570167

- The interface hold-time down feature might not work in some conditions. PR1570204

- The ZTP state machine might be stuck on the management interface for about 12 minutes. PR1570598

- Traffic loss time more than link failover time might be seen on PTX10008. PR1570665

- Silent switchover might be triggered on executing restart routing. PR1570993

- Certain leaves in /components/component[name='FPC1:CPU']/properties/property/cpu-utilization-total is not in Junos OS Evolved 20.4R2.PR1571502

- The grpcd process might crash and telemetry subscription might retry until grpcd restarts. PR1572107

- The log and syslog action does not work along with port-mirror or sample in PTX10003 and PTX10008.PR1572239

- FPCs get restarted automatically after ungraceful removal of SIBs. PR1572431

- [Junos Telemetry Interface] PTX10008:: NPU Memory KHT DLU IDB value. PR1572704

- The rpd agent crashes during interface flapping. PR1572940

- Junos OS Evolved: Specially crafted packets may cause the AFT manager process to crash and restart (CVE-2021-0286). PR1572969

- The `hash-key label-1-exp` CLI configuration statement does not take effect. PR1573109

- Junos OS Evolved:JDI_FT_REGRESSION: PTX10008 [jflow][Firewall]: Counter value from sampling firewall fails while validating IPv4 and IPv6 egress sampling with static routes. PR1573969

- Traffic might not get load balanced after setting and deleting the hash-seed value. PR1574108

- All queues are not getting correct rate as per the commit when more than one queue are configured with **transmit-rate remainder**. PR1574121

- The Packet Forwarding Engines might crash accidentally on FPC if using the service provider style layer-2 interfaces on Junos OS Evolved platforms. PR1574146

- Junos OS Evolved-PTX10008: CLI timout error **communication failure with /fpc0/evo-aftmand-bt/** and traffic loss seen. PR1574513

- The rpd might continuously crash if deleting forwarding-class policy with discard action. PR1575177

- Some error messages might be seen when performing continuous aggregated Ethernet deactivate or activate on PTX Series.PR1574714

- Huge Invalid statistics shown in `show interface statistics` when an interface is removed and added from the aggregated Ethernet bundle. PR1575623

- [Junos OS Evolved_NSR_longivety] sr_master_kkcm_thread runs at 100% CPU for long time. PR1575661

- The distribution of buffer with buffer-size remainder is not correct on Junos OS Evolved PTX Series. PR1575798

- Loss on IPv6 traffic streams might be observed after NSR SWO. PR1576369

- Clock status holdover when configured for free-run. PR1576487

- [PTX10008 Junos OS Evolved] Incorrect capacity value is shown on JNP10K-PWR-AC2 /JNP10K-PWR-DC2 PSM. PR1578682

- The kernel might hang if multiple Routine Engine primary switchovers are performed in a short span of few seconds. PR1578693

- FPC Status LED do not turn RED with power fault. PR1579466

- The Packet Forwarding Engine function might break down on all FPCs after performing Routing Engine switchover on Junos OS Evolved platform. PR1579683

- FPC is stuck in online state and seen continuously rebooting during unified ISSU. PR1580374

- The l2cpd process might crash on Junos OS Evolved platforms with dual Routing Engines. PR1580479

- Junos Telemtry Interface properties missing after HwD app restart. PR1580735

- In certain scenarios, shapers applied on a 10G interface might drop the traffic more than the configured max-rate. PR1580795

- Streaming over IPv6 fails in Junos OS Evolved. PR1581341

- [mpls] PTX10004 ::After disabling the active path, forcing FRR, we see large traffic loss, also we see that the irp.core.trapcode.cfg_err counter increased. PR1582170

- The broadcast traffic is matched by multicast filter. PR1582217

- The CLI `show chassis craft-interface` does not show correct PSM LED status on PTX10008 Junos OS Evolved.PR1582444

- Node locked license addition fails in Junos OS Evolved. PR1582704

- There can be a failure of the config-sync service and a major system alarm is raised after upgrade. PR1582717

- Junos Telemetry Interface: Interfaces: Missing Leaves - Transceiver/state. PR1583076

- New primary might be struck with **Switchover is in transition, Please wait** after primary reboot test case if the switchover happens back-to-back within 2-3 seconds.PR1583347

- The system may crash if configuring IPv6 FBF with prefix < /88 on all Junos OS Evolved platforms. PR1583374

- The FRR convergence number is high with ALB enabled on aggregated Ethernet bundle. PR1583866

- The ospf-hello ddos statistics pktCnt is listed as 0. PR1584458

- After PIC offline and online, `show interfaces queue <intf>` shows large values for cumulative tail-drop and RED-drop packets and bytes. PR1585552

- Packet loss might be seen during global repair of FRR. PR1586122

- PTX10008: NPU HBM statistics. PR1586148

- Npu Sensor: "components-memory" vs "components" PR1588242

- NPU Sensor: "components-memory" vs "components"

- Traffic loss observed on global repair after disabling of active path forcing FRR. PR1589803

- [platform_re] [re_generic] PTX10008 : The Packet Forwarding Engine stuck in READY state with anomalies type net::juniper::fabric::fabricPfeE. PR1590319

- If a system has power shortage, then post switchover we see unexpected FPCs or SIBs go down on the new primary. FPCs that were down on the previous primary might be online if they are discovered earlier in the powerManager on the new primary. PR1592004

- PTX10004: Power off re1 message is very vague and might panic users. PR1592145

- PTX10008 Serviceability: picd log floods when there is **Optics does not support configured speed** system alarm.

  PR1592165

- ZTP occasionally fails to apply user configuration after the system upgrade.PR1592281

- Duplicate Junos Telemetry interface leaf "oper-status" tag for physical interface index 16386 has mismatch value. PR1592468

- Port related component sensor does not get exported when subscribed to **/components/component/state/** path. PR1593031

- Port mirroring instance down with mirrored output as tagged interface. PR1593276

- [rpda] PTX10004 : :: PDT: rpdagent crash seen in the primary Routing Engine @NHTable::insert , comp_nh_rts_handler after fourth GRES with GR enabled. PR1593104

- Load-balance might not take effect for the Layer 2 VPN traffic on the PTX10008 platforms. PR1593548

- On Junos OS Evolved platforms, "type" leaf value for "FPC3:PIC0:PORT0:XcvrX" displays XCVR as opposed to TRANSCEIVER displayed in Junos OS. PR1595103

- Some TCP sessions might not be established after performing the `request system snapshot` command. PR1595470

- The ifmand core files detected during the NSR switchovers with BT @0x00007fd98dc609d8 in bq_hash_elinks_equal (ds2=0x7fd83b74f600, ds1=0x7fd83be4d2d0) at ../../src/cbq.c:771. PR1595846

- The aftmand core might be observed on all Junos EVO platforms. PR1597649

- Continuous FPC restart might be observed on Junos Evolved products with firewall policer configuration. PR1602446

Infrastructure

- Junos OS Evolved Platforms: The IPv6 BGP session might flap continuously due to transport error (CVE-2021-0226). PR1544978

- The TCP session might fail on Junos OS Evolved platforms with dual Routing Engines. PR1555441

- Default multicast ff00::/8 route not available while verifying IPv6 multicast routes. PR1563940

- There might be continuous memory increase noticed for systemd daemon.PR1566717

- ZTP over IPv6 on a management interface is not functional over 21.1R1-EVO. PR1567967

- The backup router might get stuck in the idle state during the NSR replication for IBGP single hop peers. PR1569696

- In Junos OS Evolved, BGP and LDP sessions with TCP MD5 authentication established with peers not configured for authentication (CVE-2021-0297). PR1569843

- The configuration statement `default-address-selection` might not work on all Junos EVO platforms. PR1570552

- Next-hop incorrectly associated with lo0 in the forwarding table when the interface is configured as unnumbered. PR1570918

- ToS of self-initiated packets might get changed unexpectedly. PR1578247

- The FTP IPv6 server function might be failure on all Junos OS Evolved platforms. PR1591733

- The TCP-based protocol sessions might remain down after multiple Routing Engine switchovers. PR1593580

Interfaces and Chassis

- [hostpath] [hostpathtag] Junos OS Evolved-PTX10003 : :: "picd" Publish-deleted anomolies seen for the type "net::juniper::hwd::serdesDfeTuneStatusE" .PR1547484

- [lacp] [lacptag] PTX10004 lacpd core is observed after router reboot .PR1553196

- PTX10001-36MR: Control physical interface might not be present for ports et-0/0/11 and et-0/2/11. PR1566752

- There might be increase in memory for the fabspoked process .PR1574391

- The `show interface description` display order is different from Junos OS and Junos OS Evolved.PR1576224

- PTX10008: ifmand core file seen at IFAManager::handleIFACModify.PR1583681

- When changing the Micro BFD session's address from IPv4 to IPv6 or vice versa, the BFD session and aggregated Ethernet interfaces go down.PR1584853

- Some interface units description are missing from the output of `show interfaces description` on certain PTX Series platforms running Junos OS Evolved .PR1591340

- PTX10003-160C Junos OS Evolved, interface is not programed in routing-instance. PR1596768

Network Management and Monitoring

- The SNMP hostname does not match the configured hostname on Junos OS Evolved based device. PR1567835

- The snmpd core might be generated on Junos OS Evolved platforms. PR1572236

Routing Policy and Firewall Filters

- Syslog as an action of filter by default generates logs in syslog in Junos OS Evolved which is different from Junos OS. PR1564088

- Error while applying filter as output-list with DSCP action. PR1569691

- Toggle of the interface-specific field of filter already bound to interface is not allowed. PR1571654

Routing Protocols

- The rpd might crash on the backup Routing Engine after rpd restart is triggered on the primary Routing Engine. PR1563350

- The rpd process might crash when there is BGP session re-establishing or flapping. PR1567182

- There might be 10 seconds delay to upload the LSP on the point-to-point interface if rpd is restarted on its direct neighbor. PR1571395

- The ppmd might crash when enabling MD5 authentication on OSPF with BFD flapping. PR1576893

User Interface and Configuration

- The configuration under groups stanza is not inherited properly. PR1529989

- The Junos OS Evolved operational state is incorrect on the system and CoS schedulers and configuration change might not take effect. PR1536615

- shell-init: error retrieving current directory: getcwd: cannot access parent directories: No such file or directory. PR1549479

- The LACP might stop working after disabling lacp sync-reset. PR1576146

Junos OS Evolved Release Notes for QFX5130-32CD,QFX5220, and QFX5700 Devices

IN THIS SECTION

These release notes accompany Junos OS Evolved Release 21.2R2 for QFX5130-32CD, QFX5220-32CD, QFX5220-128C, and QFX5700 switches. They describe new and changed features, limitations, and known and resolved problems in the hardware and software.

What's New

IN THIS SECTION

Learn about new features introduced in these releases for QFX Series Switches.

What's New in 21.2R2

IN THIS SECTION

Authentication and Access Control

- **Support for SSH attributes (ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220)**—Starting in Junos OS Release Evolved 21.2R2, support for the follow SSH attributes is added at the `[edit system services ssh]` hierarchy level:

    - sftp

    - root-login

    - client-alive-count-max

    - client-alive-interval

    - max-sessions-per-connection

[See Enabling Remote Access and File Access Services.]

EVPN

- **DHCP Relay in EVPN-VXLAN (QFX5130-32CD)**—Starting in Junos OS Evolved Release 21.2R2, QFX5130-32CD switches support DHCP relay in an EVPN-VXLAN fabric. You can configure DHCP relay in centrally-routed and edge-routed bridging overlays. Support for DHCP relay includes DHCPv4 and DHCPv6.

What's New in 21.2R1

Hardware

- **New QFX5700 Switch (QFX Series)**—In Junos OS Evolved Release 21.2R1, we introduce QFX5700 switch as the first modular chassis from Juniper that uses Broadcom's Trident 4 chipset to support and deliver a diverse set of use cases. Featuring a 5-U form factor, QFX5700 supports very large, dense, and fast 400GbE IP fabrics with a fully redundant 12.8Tb capacity that benefits large public cloud providers. It also offers 10/40/100/400GE high port density and delivers high-performance, scale, and flexibility to support IP services and functions for service provider, web, and enterprise networks.

> **NOTE**: Upgrade to Junos OS Evolved Release 21.2R2 for the latest software features and bug fixes.

"Table 2" on page 49 summarizes the QFX5700 features supported for Junos OS Evolved Release 21.2R1.

Table 2: Features Supported by the QFX5700 Switches

Class of service	- Support for class of service (CoS) configuration with these limitations: 802.3X Ethernet PAUSE is not supported. - CoS flexible hierarchical scheduling, also known as enhanced transmission selection (ETS), is not supported. - Neither MPLS EXP ingress packet classification nor egress rewrite rules are supported. - Classifiers and rewrite rules are applied to logical interfaces instead of physical interfaces. [See CoS Support on QFX Series Switches, EX4600 Line of Switches, and QFabric Systems.] - CoS support on EVPN-Virtual Extensivle LAN (VXLAN). Support is provided for defining classifiers and rewrite rules on leaf (initiation and terminations) and spine nodes for EXPN VXLANs. Support is also provided for defining schedulers, interpolated drop profiles, explicit congestion notification (ECN), and priority based flow control (PFC). [See CoS Support on EVPN VXLANs.]

DHCP	• Support for DHCPv4 and DHCPv6 stateless relay over Layer 3 (L3) interfaces. Support includes: • Option-82 for DHCPv4. • Option-18 and Option-37 for DHCPv6. • Virtual router aware DHCPv4/v6 stateless relay. **NOTE**: Support does not include IRB interfaces. [See DHCP Relay Agent.]

EVPN	• EVPN-VXLAN support for unicast traffic using media access control (MAC) virtual routing and forwarding (VRF) routing instances. The switch can be a leaf device or a spine device in an edge-routed bridging or centrally routed bridging overlay design. You can configure multiple EVPN instances (EVIs) of type `mac-vrf`. Each EVI can support a different EVPN service type (`vlan-based`, `vlan-aware`, or `vlan-bundle`). The switch creates and uses one virtual tunnel endpoint (VTEP) logical interface per remote provider edge (PE) device by default, regardless of the number of routing instances. This implementation improves VXLAN VTEP scaling with multiple routing instances. EVPN-VXLAN support on this switch includes:
	• External BGP (EBGP) and internal BGP (IBGP) overlays.
	• Single-homing and all-active multihoming.
	• Layer 2 and Layer 3 unicast for IPv4 and IPv6 with ARP suppression.
	• Proxy ARP and ARP suppression for Layer 2 and Layer 3 IRB traffic.
	• Proxy Neighbor Discovery Protocol (NDP) and NDP suppression for Layer 2 and Layer 3 IRB traffic.
	• Service provider style configuration with Q-in-Q support, supported for Layer 2 gateways only and only with MAC VRF `vlan-bundle` service type.
	• Storm control.
	• MAC mobility, MAC limiting, MAC move limiting, and duplicate MAC detection.
	• Core isolation.
	• Proxy re-advertisement of EVPN Type 2 MAC+IP routes by all provider edge devices on the same Ethernet segment identifier (ESI).
	• Virtual machine traffic optimization (VMTO).
	• OSPF and BGP routing protocols on IRB interfaces.
	[See EVPN User Guide.]

	• Support for sFlow monitoring technology in EVPN-VXLAN fabrics. [See Overview of sFlow Technology.] • Support for port mirroring in EVPN-VXLAN fabrics. [See How to Configure Remote Port Mirroring for EVPN-VXLAN Fabrics.] • Support for EVPN Type-5 routes in EVPN-VXLAN fabrics. [See Understanding EVPN Pure Type-5 Routes.] • Support for EVPN-VXLAN firewall filtering and policing. [See Firewall Filter Match Conditions and Actions (QFX and EX Series Switches).]
Hardware	• The QFX5700 switch supports up to 8 line cards and each line card supports 16 QSFP28 ports that operate at 100GbE speed or 4 QSFP56-DD ports that operate at 400GbE speed. The QFX5700 switch has AC or DC power supplies and front-to-back airflow. [See QFX5700 Hardware Guide.]
High availability (HA) and resiliency	• Resiliency support for Routing and Control Board (RCB) includes CPU memory and dual in-line memory module. You can configure fault-handling actions such as logging the error, raising alarms, sending SNMP traps, and indicating error conditions by using LEDs. [See routing-engine (Chassis).] • Resiliency support for the chassis, line card (JNP-FPC-4CD), and Forwarding Engine Board (FEB)—QFX5130-FEB—includes handling the faults related to the links between components; for example, between a line card (such as JNP-FPC16C) and the switch fabric. [See QFX Hardware Components.]

Interfaces and chassis	- Support for GRE tunneling. [See Generic Routing Encapsulation.] - Support for qualifying optics on the 100GbE and the 400GbE FPC line cards includes software monitoring, sensor diagnostics, FPC interfaces node level failure or restoration, events, and error logging. [See QFX Hardware Components.] - Support for two new FPCs introduced for QFX5700 switches: - JNP-FPC-16C: The line card contains a total of 16 QSFP28 ports that support 100Gbps and 40Gbps speeds. You can channelize the ports operating at: 100Gbps to four 25Gbps channels. 40Gbps to four 10Gbps channels. - JNP-FPC-4CD: The line card contains a total of four QSFP56-DD ports that support 400Gbps, 100Gbps, and 40Gbps speeds. You can channelize the ports operating at: 400Gbps to four 100Gbps channels. 100Gbps to four 25Gbps channels. 40Gbps to four 10Gbps channels. [See Port Settings.] - Support for one or two RCBs. [See QFX5700 Routing and Control Board.] - Support for the FEB with field-replaceable unit (FRU) management that includes: - Health monitoring - Fault handling - Systems alarms - Notification by LEDs - Power budgeting

	• Cooling • Management [See request chassis feb.]
IP tunneling	• Support for IPv4 and IPv6 unicast IP-over-IP (IPv4) filter based decapsulation. [See Overview of Next-Hop-Based Dynamic Tunneling Using IP-Over-IP Encapsulation.]
Juniper extension toolkit	• Support for Firewall Service and Interfaces Service JET APIs. [See Juniper Engineering Network website.]

L2 features	• Support for L2 control protocols: xSTP, LACP, and LLDP.
	
	[See Ethernet Switching User Guide.]
	
	• Support for these L2 features:
	
	  • Enhanced L2 Software (ELS)
	
	  • 802.1D
	
	  • 802.1Q VLAN tagging
	
	  • 802.1Q VLAN trunking
	
	  • 802.1p
	
	  • Routed VLAN interface (RVI)
	
	  • MAC address aging configuration
	
	  • Static MAC address assignment for an interface
	
	  • Disable MAC learning
	
	[See Ethernet Switching User Guide.]

| MPLS | RSVP-Traffic Engineering (TE) supports preempting secondary label-switched paths (LSPs) that are signaled but not active. [See RSVP Overview.] |

Multicast	• Support for these multicast forwarding features:
	• IPv4 and IPv6 multicast
	• IGMP
	• Multicast Listener Discovery (MLD) protocol
	• Protocol Independent Multicast source-specific multicast (PIM SSM)
	• Protocol Independent Multicast sparse mode (PIM SM) **NOTE**: Support does not extend to features beyond those listed above. In this release, IGMP snooping, MLD snooping, multicast virtual private network (MVPN) Multicast, PIM multicast-only fast reroute (MoFRR), PIM first hop router (FHR), rendezvous point (RP), and last hop router (LHR) are not supported. In addition, the IRB interface is not supported as either a source or as a receiver. Make-before-break (MBB) is not supported for existing L3 aggregated Ethernet (AE) or LAG receivers (member addition/deletions or up/downs).
	[See Multicast Overview.]
	• Support for these IGMP snooping with IRB features:
	• IGMP V1, V2, and V3 with plain L2 snooping with IRB (only if device acts as an LHR)
	• Proxy mode
	• Enterprise-style CLI only
	• Any-source multicast (ASM) and source-specific multicast (SSM) modes
	Limitations include:
	• IGMP group-specific queries received on a multicast-router interface are forwarded to all other interfaces in the VLAN.
	• MBB on existing L2aggregated Ethernet or LAG interfaces, including for member additions, deletions, and link up or down events.

	• All unregistered IPv4 and IPv6 multicast packets are forwarded to the multicast router interfaces in the VLAN, even if an interface is configured as a multicast router interface only for IGMP snooping. • Neither MLD snooping, PIM snooping, snooping with VPLS, EVPN-VXLAN,nor EVPN-MPLS is supported. [See IGMP Snooping Overview and Integrated Routing and Bridging.]
Network management and monitoring	• Support for sFlow monitoring technology. [See Understanding How to Use sFlow Technology for Network Monitoring.] • Support for port mirroring. [See Understanding Port Mirroring and Analyzers.]
Protection against distributed denial of service (DDoS) attacks	• Support for DDoS protection, which is enabled by default. [See Control Plane Distributed Denial-of-Service (DDoS) Protection Overview.]
Routing policy and firewall filters	• L3 support for firewall filters and policers. [See Firewall Filter Match Conditions and Actions (QFX and EX Series Switches).]

Routing protocols	• Support for Unified Forwarding Table (UFT) and L3 sub-interface features—The QFX5700 line of switches supports these UFT and L3 sub-interface features: The UFT feature enables you to allocate forwarding table resources to optimize the memory available for different address types based on the needs of your network. The UFT stores both the L2 and L3 entries that enable you to set default sizes for different entries. These applications share UFT search banks: • L2 MAC addresses. • IPv4 and IPv6 host routes. • L2 and L3 multicast routes. • IPv4 and IPv6 longest prefix match (LPM) or prefix entries that are supported in UFT through algorithmic longest prefix match (ALPM). [See forwarding-options.] • Support for redistribution of IPv4 routes with IPv6 next hop into BGP. [See Understanding Redistribution of IPv4 Routes with IPv6 Next Hop into BGP.]
Software installation and upgrade	• Support for zero-touch provisioning (ZTP) on the management and the WAN interfaces. [See Zero Touch Provisioning Overview.] • Support for secure boot—The implementation is based on the UEFI 2.4 standard. [See Junos OS Software Installation and Upgrade Guide.]

- **Support for the QSFP-100G-DR and QSFP-100G-FR transceivers (QFX5220-32CD and QFX5220-128C)**—Starting in Junos OS Evolved Release 21.2R1, the QFX5220-32CD and QFX5220-128C switches support the QSFP-100G-DR and QSFP-100G-FR transceivers.

[See Hardware Compatibility Tool.]

Class of Service

- **Support for CoS features on EVPN VXLAN (QFX5130-32CD)**—Starting in Junos OS Evolved Release 21.2R1, QFX5130-32CD routers support defining classifiers and rewrite rules on leaf (initiation and terminations) and spine nodes for EXPN VXLANs. Support is also provided for defining schedulers, interpolated drop profiles, explicit congestion notification (ECN), and priority based flow control (PFC).

  [See CoS Support on EVPN VXLANs.]

EVPN

- **EVPN-VXLAN support with MAC VRF routing instances (QFX5130-32CD)**—Starting in Junos OS Evolved Release 21.2R1, QFX5130-32CD switches support EVPN-VXLAN for unicast traffic using MAC virtual routing and forwarding (VRF) routing instances. The switch can be a leaf device or a spine device in an edge-routed bridging or centrally routed bridging overlay design. You can configure multiple EVPN instances (EVIs) of type `mac-vrf`. Each EVI can support a different EVPN service type (`vlan-based`, `vlan-aware`, or `vlan-bundle`). The switch creates and uses one VTEP logical interface per remote provider edge (PE) device by default, regardless of the number of routing instances. This implementation improves VXLAN VTEP scaling with multiple routing instances.

  EVPN-VXLAN support on this switch includes:

  - EBGP and IBGP overlays

  - Single-homing and all-active multihoming

  - Layer 2 and Layer 3 unicast for IPv4 and IPv6 with ARP suppression

  - Proxy ARP and ARP suppression for Layer 2 and Layer 3 IRB traffic

  - Proxy NDP and NDP suppression for Layer 2 and Layer 3 IRB traffic

  - Service provider style configuration with Q-in-Q support, supported for Layer 2 gateways only and only with MAC VRF `vlan-bundle` service type

    > **NOTE**: We support only the Q-in-Q use cases described in Examples: Tunneling Q-in-Q Traffic in an EVPN-VXLAN Overlay Network.

  - Storm control

  - MAC mobility

  - Core isolation

- Proxy re-advertisement of EVPN Type 2 MAC+IP routes by all provider edge devices on the same ESI

- Virtual machine traffic optimization (VMTO)

- OSPF and BGP routing protocols on IRB interfaces

[See EVPN User Guide.]

- **Support for EVPN Type 5 routes (QFX5130-32CD)**—Starting in Junos Evolved OS 21.2R1, the QFX5130-32CD switches support EVPN type 5 routes. EVPN Type 5 routes support inter-subnet routing across datacenters by using IP prefix advertisement.

  [See Understanding EVPN with VXLAN Data Plane Encapsulation.]

- **Support for Port Mirroring in EVPN-VXLAN fabrics (QFX5130-32CD)**—Starting in Junos Evolved OS 21.2R1, the QFX5130-32CD switches support port mirroring in EVPN-VXLAN fabrics.

  [See How to Configure Remote Port Mirroring for EVPN-VXLAN Fabrics.]

- **Firewall filtering and policing (QFX5130-32CD)**—Starting in Junos Evolved OS 21.2R1, QFX5130-32CD switches support firewall filtering and policing in EVPN-VXLAN fabrics.

  [See Firewall Filter Match Conditions and Actions (QFX and EX Series Switches).]

High Availability

- **NSR support for controller-initiated RSVP LSPs (PTX10003, PTX10004, PTX10008, and QFX5220)**—Starting in Junos OS Evolved Release 21.2R1, we support NSR for controller-initiated RSVP-based point-to-point (P2P) and point-to-multipoint (P2MP) LSPs. The primary Routing Engine synchronizes all RSVP LSPs initiated by Path Computational Elements (PCEs) with the backup Routing Engine. It also synchronizes multicast flow specifications for any PCE-initiated P2MP LSPs with the backup Routing Engine. This ensures zero traffic loss for the traffic carried over PCE-initiated RSVP LSPs during Routing Engine switchovers. You enable this feature when you configure NSR.

  [See PCEP Configuration.]

IP Tunneling

- **Support for IPv4 and IPv6 unicast IP-over-IP (IPv4) filter based decapsulation (QFX5130-32CD and QFX5220)**—Starting in Junos OS Evolved Release 21.2R1, we provide support for filter-based decapsulation for IP-over-IP and GRE tunnels. By using the feature, you can decapsulate any source IP address, destination IP addresses, and any range of prefixes. You can use the feature in in deployments where the transit router has to decapsulate the IP-over-IP packets and forward them based on their inner destination IP address. You can configure the feature for IP-over-IP and GRE tunnels by using the following configurations at the [edit] hierarchy level:

```
set firewall family inet filter <filter name> term <ipip-decap-term-name> from source-address <address> from
destination address <destination address> from protocol ipip then decapsulate ipip routing-instance <name of
the routing instance>

set firewall family inet filter <filter name> term <ipip-decap-term-name> from source-address <address> from
destination address <destination address> from protocol gre then decapsulate gre routing-instance <name of the
routing instance>
```

> **NOTE**: Note: On QFX5220 both source and destinations IP addresses must be configured with /32 mask.

[See Overview of Next-Hop-Based Dynamic Tunneling Using IP-Over-IP Encapsulation and Example: Configuring Next-Hop-Based IP-Over-IP Dynamic Tunnels.]

Junos Telemetry Interface

> **NOTE**: For Routing Engine telemetry sensors supported by this platform, see Telemetry Sensor Explorer. If any Platform Forwarding Engine sensors have been added for this release, they are listed below.

- **gRPC mutual authentication (PTX10001-36MR, PTX10003, PTX10008, and QFX5220)**—Starting in Junos OS Evolved Release 21.2R1, Junos telemetry interface (JTI), you can configure Junos telemetry interface (JTI) and Remote Procedure Calls (gRPC) to require client authentication as well as server authentication. Previously, only the client initiating an RPC request was able to authenticate the server; that is, a Juniper Networks device, using SSL certificates.

  [See Configuring Bidirectional Authentication for gRPC for Junos Telemetry Interface.]

Licensing

- **Juniper Agile Licensing (QFX5130-32CD)**—Starting in Junos OS Release Evolved 21.2R1, the QFX5130-32CD support Juniper Agile Licensing.

  Juniper Agile Licensing provides simplified and centralized license administration and deployment. You can use Juniper Agile Licensing to install and manage licenses for software features.

  Juniper Agile Licensing supports soft enforcement of software feature licenses. With soft enforcement, if you configure a feature without a license, Junos OS displays a warning when you commit the configuration. However, the feature is operational. In addition, Junos os generated periodic alarms indicating that you need the license to use the feature. You can see the list of alarms at System Log Explorer.

[See Flex Software License for QFX Switches, Juniper Agile Licensing Guide, and Configuring Licenses in Junos OS.]

MPLS

- **RSVP-TE supports preempting secondary LSPs that are signaled but not active (PTX Series and QFX Series)**—Starting in Junos OS Evolved Release 21.2R1, you can configure the hold priority of the secondary standby label-switched path (LSP) for RSVP-Traffic Engineering (RSVP-TE). The hold priority will be used to determine if the standby non-active LSP can be preempted. This will help to bring up non-standby secondary path LSPs with higher setup priority which are not able to come-up because of bandwidth crunch. To configure the non-active hold priority value for a secondary standby path, use the non-active-hold-priority statement at the [`edit protocols mpls label-switched-path <lsp-name>`] hierarchy level. You can set the priority from 0 through 7, where 0 is the highest priority and 7 is the lowest.

  [See RSVP Overview.]

Network Management and Monitoring

- **Support for sFlow technology with VXLAN (QFX5130-32CD)**—Starting in Junos OS Evolved Release 21.2R1, we support sFlow technology with VXLAN. sFlow is a monitoring technology for high-speed switched or routed networks. The sFlow agent performs packet sampling and gathers interface statistics, and then combines the information into UDP datagrams that are sent to sFlow collectors.

  [See sFlow Monitoring Technology.]

Network Security

- **Protect your network against DDoS attacks (QFX5130-32CD)**—Distributed denial-of-service (DDoS) attacks typically use a large number of network control packets to trigger exceptions in the network, consuming resources and crippling network operations. Starting in Junos OS Evolved Release 21.2R1, QFX5130-32CD switches have DDoS protection enabled by default. DDoS protection uses firewall filters and policers to discard or rate-limit control plane traffic. Thus, malicious traffic cannot cause device failure. You can disable DDoS protection or change default policer parameters for a protocol group or supported packet types in a protocol group.

  [See Distributed Denial-of-Service (DDoS) Protection Overview.]

Routing Protocols

- **Redistribution of IPv4 routes with IPv6 next hop into BGP (QFX Series)**—Starting in Junos OS Evolved Release 21.2R1, devices running Junos OS can forward IPv4 traffic over an IPv6-only network, which generally cannot forward IPv4 traffic. As described in RFC 5549, IPv4 traffic is tunneled from CPE devices to IPv4-over-IPv6gateways. These gateways are announced to CPE

devices through anycast addresses. The gateway devices then create dynamic IPv4-over-IPv6 tunnels to remote CPE devices and advertise IPv4 aggregate routes to steer traffic. Route reflectors with programmable interfaces inject the tunnel information into the network. The route reflectors are connected through IBGP to gateway routers, which advertise the IPv4 addresses of host routes with IPv6 addresses as the next hop.

To configure a dynamic IPv4-over-IPv6 tunnel, include the dynamic-tunnels statement at the [edit routing-options] hierarchy level.

[See Understanding Redistribution of IPv4 Routes with IPv6 Next Hop into BGP.]

System Management

- **Support for Precision Time Protocol (PTP) enterprise profile (QFX5130-32CD)**—Starting in Junos OS Evolved Release 21.2R1, the QFX5130-32CD switch supports the PTP enterprise profile, which is based on PTP version 2 (PTPv2). The PTP enterprise profile enables the enterprise and financial markets to add a timestamp to the operations of different systems and to handle a range of latencies and delays.

  Limitations

  - Because of hardware limitations, the interface et-0/0/32 is not used when the Precision Time Protocol (PTP) application is run.

  - Primary ports do not support two-step PTP.

  - The QFX5130-32CD does not support double-tagging over Layer 3.

  - The minimum packet rate for received sync packets is 8 pps. The client port recovers the primary clock only when the sync and delay-request packets are sent at a rate of not less than 8 pps.

  [See Understanding the Precision Time Protocol Enterprise Profile.]

What's Changed

IN THIS SECTION

Learn about what changed in these releases for QFX Series Routers.

What's Changed in Release 21.2R2

EVPN

- **Community information no longer included in VRF routing table**— The QFX series switches will no longer include the inherited advertised route target communities, EVPN extended communities, or vxlan encapsulation communities for EVPN Type 2 and EVPN Type 5 routes when an IP host is added in the VRF routing table.

- **Minimum auto-recovery time reduced for duplicate MAC address detection (QFX series)**—Junos OS has changed the minimum value allowed for auto-recovery time for duplicate MAC address detection from 5 minutes to 1 minute. The auto-recovery time is the length of time that the device suppresses a duplicate MAC address. Reducing the auto-recovery time allows customers to quickly recover from a MAC address duplication state. You configure the `auto-recovery-time` option under the `duplicate-mac-detection` statement at the **edit routing-instances routing-instance-name protocols evpn** or **edit protocols evpn** hierarchy.

  [See Changing Duplicate MAC Address Detection Settings .]

Network Management and Monitoring

- **Change in behavior of SNMP MIB object if Alias**— SNMP MIB object ifAlias now shows the configured interface alias. In earlier releases, ifAlias used to show configured interface description.

Software Licensing

- **Juniper Agile Licensing (PTX10003, PTX10016, QFX5130-32CD, and QFX5220)**—Starting from this release onwards, the Juniper Agile License Manager is deprecated. You can use the Juniper Agile Licensing Portal to activate, install, manage, and monitor licenses on Juniper Networks devices.

  [See Juniper Agile Licensing Guide.]

What's Changed in Release 21.2R1

Authentication and Access Control

- **Command to automate SSH key-based authentication (ACX Series, PTX Series, and QFX Series)**—You can set up SSH-key based authentication between the network device and a remote host by issuing the `request security ssh password-less-authentication` operational mode command. When you execute the command with the appropriate options, the device generates SSH keys for the current user, provided the user does not already have existing keys, and transfers the user's public key to the **authorized_keys** file of the specified user on the remote host.

  [See request security ssh password-less-authentication.]

General Routing

- **SSH session connection limit and rate limit per connection (PTX Series and QFX Series)**—We have introduced SSH `connection-limit` and `rate-limit` options at the **edit system services ssh** hierarchy levels to enable SSH connection limit and rate limit per connection. The default connection limit value is 75 connections and there is no default value associated with rate limit.

- **Unresolved hosts identified in MAC-IP address entries (QFX5130-32CD, QFX5220)**—When you use the `show ethernet-switching mac-ip-table` command to display the MAC-IP entries in the ethernet switching table, unresolved hosts are identified with a Ur flag.

- **Enhancement to the default `remnant-holdtime` (Junos OS Evolved platforms: ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, and QFX5220)**— Starting this release, the default `remnant-holdtime` has been increased from 180 seconds to 300 seconds. This provides sufficient time for protocols to start and sync routes from neighbors in a scaled environment, during rpd restart. You can configure `remnant-holdtime` at the `edit routing-options forwarding-table` hierarchy level.

[See forwarding-table.]

- **Default FEC Settings (QFX5130-32CD, QFX5220-32CD, and QFX5220-128C)**—The default FEC mode for 4x25 optics is changed to FEC91 instead of FEC74. For 4x25G Direct Attach Copper Breakout Cables (DACBO), the default FEC mode remains as FEC74.

  [See show interfaces extensive.]

- **Enhancement to the show chassis pic command (Junos OS Evolved)**—You can now view additional information about the optics when you run the `show chassis pic` command. The output now displays the following additional field: MSA Version: Multi-source Agreements (MSA) version that the specified optics is compliant to. Values supported are: SFP+/SFP28 — SFF-8472 (versions 9.3 - 12.3), QSFP+/QSFP28 — SFF 8363 (versions 1.3 - 2.10), and QSFP-DD — CMIS 3.0, 4.0, 5.0. Previously, the show chassis pic command did not display this additional field.

  [See show chassis pic.]

- **Enhancement to the show interfaces (Aggregated Ethernet) command (PTX Series and QFX Series)**—When you run the `show interfaces extensive` command for aggregated Ethernet interfaces, you can now view following additional fields for MAC statistics : Receive, Transmit, Broadcast and Multicast packets.
  [See show chassis pic.]

- **Mozilla certification authority (CA) certificates removed (ACX Series, PTX Series, and QFX Series)**—To minimize security risks, Junos OS Evolved no longer includes Mozilla's set of root certificates from various CA operators by default. To use Docker container images from a registry that requires TLS authentication, you must first save the image as a tar archive on a remote device and then import the contents of the archive on the device running Junos OS Evolved.

  [See Running Third-Party Applications in Containers..]

Junos XML API and Scripting

- **Changes to how command-line arguments are passed to Python op scripts (ACX Series, PTX Series, and QFX Series)**—When the device passes command-line arguments to a Python op script, it prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device prefixes a single hyphen (-) to all argument names.

  [See Declaring and Using Command-Line Arguments in Op Scripts.]

- **The `language python` statement is enabled by default (ACX Series, PTX Series, and QFX Series)**—The `language python` statement is configured by default in the `junos-defaults` configuration group on devices running Junos OS Evolved. Thus, you can execute unsigned Python scripts using the default Python version without explicitly configuring the statement on the device.

[See Requirements for Executing Python Automation Scripts on Devices Running Junos OS.]

Layer 2 Features

- **Link selection support for DHCP (QFX Series)**—We've introduced `link-selection` statement at the `edit forwarding-options dhcp-relay relay-option-82` hierarchy level, which allows DHCP relay to add suboption 5 to option 82. Suboption 5 allows DHCP proxy clients and relay agents to request an IP address for a specific subnet from a specific IP address range and scope. Earlier to this release, the DHCP relay drops packets during the renewal DHCP process as the DHCP Server uses the leaf's address as a destination to acknowledge DHCP renewal message.

  [See relay-option-82..]

Network Management and Monitoring

- **Changes to `<commit>` RPC responses in RFC-compliant NETCONF sessions (ACX Series, PTX Series, and QFX Series)**—When you configure the `rfc-compliant` statement at the `[edit system services netconf]` hierarchy level, the NETCONF server's response for `<commit>` operations includes the following changes:

  - If a successful `<commit>` operation returns a response with one or more warnings, the warnings are redirected to the system log file, in addition to being omitted from the response.

  - The NETCONF server response emits the `<source-daemon>` element as a child of the `<error-info>` element instead of the `<rpc-error>` element.

  - If you also configure the `flatten-commit-results` statement at the `[edit system services netconf]` hierarchy level, the NETCONF server suppresses any `<commit-results>` XML subtree in the response and only emits an `<ok/>` or `<rpc-error>` element.

  [See Configuring RFC-Compliant NETCONF Sessions.]

- **Changes to how command-line arguments are passed to Python action scripts (ACX Series, PTX Series, and QFX Series)**—When a custom YANG RPC invokes a Python action script and passes command-line arguments to the script, the device prefixes a hyphen (-) to single-character argument names, and it prefixes two hyphens (--) to multi-character argument names. The prefix enables you to use standard command-line parsing libraries to handle the arguments. In earlier releases, the device passes the unmodified argument names to the script.

  [See Creating Action Scripts for YANG RPCs on Devices Running Junos OS and Displaying Valid Command Option and Configuration Statement Values in the CLI for Custom YANG Modules.]

- **Changes in contextEngineID for SNMPv3 INFORMS (ACX Series, PTX Series, and QFX Series)**—Now the contextEngineID of SNMPv3 INFORMS is set to the local engine-id of Junos devices. In earlier releases, the contextEngineID of SNMPv3 INFORMS was set to remote engine-id.

[See SNMP MIBs and Traps Supported by Junos OS.]

Platform and Infrastructure

- **The `jcs:invoke()` function supports suppression of root login and logout events in system log files for SLAX event scripts (ACX Series, EX Series, MX Series, PTX Series, QFX Series, and SRX Series)**—The `jcs:invoke()` extension function supports the `no-login-logout` parameter in SLAX event scripts. If you include the parameter, the function does not generate and log UI_LOGIN_EVENT and UI_LOGOUT_EVENT messages when the script logs in as root to execute the specified remote procedure call (RPC). If you omit the parameter, the function behaves as in earlier releases in which the root UI_LOGIN_EVENT and UI_LOGOUT_EVENT messages are included in system log files.

  [See invoke() Function (SLAX and XSLT).]

Known Limitations

IN THIS SECTION

- General Routing | **68**

Learn about known limitations in Junos OS Evolved Release 21.2R2 for QFX Series switches.

General Routing

- On QFX5700 platforms system goes for reboot when faulty FEB is off-lined for recovery. PR1578090

- During FPGA (Field Programmable Gate Array) firmware upgrade, if power fluctuation happens, the entire system goes for a reboot, and the FPGA will fallback to the golden image. Customers need to try the upgrade again. PR1586282

Open Issues

Learn about open issues in Junos OS Evolved Release 21.2R2 for QFX Series switches.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online Junos Problem Report Search application.

General Routing

- On QFX5220-32CD, VLANs between 3968 and 4095 are reserved for Layer 3 interfaces by default. So, these VLANs cannot be used for Layer 2 interfaces. As of now there is no commit check added for this purpose. You need to take care of this while configuring VLANs for Layer 2. PR1423468

- On the QFX5130-32CD platform running Junos OS Evolved, you cannot clear or reset the disk option specified in the scheduled request node reboot command. The node reboots with the disk option last specified. PR1517596

- FIPS mode is not supported. PR1530951

- On all QFX Junos OS Evolved platforms, if scaled OSPF (Open Shortest Path First) neighbors (e.g 512 neighbors) are formed over an IRB (Integrated Routing and Bridging) interfaces with Layer 2 interfaces in the interface-mode trunk, the OSPF routes might be not learned from the neighbors. The issue results in traffic loss. PR1570498

- On QFX5700, Autoneg is not supported for 100G DAC interfaces. PR1594135

Resolved Issues

Learn about the issues fixed in these releases for QFX Series switches.

For the most complete and latest information about known Junos OS Evolved defects, use the Juniper Networks online Junos Problem Report Search application.

Resolved Issues: 21.2R2

General Routing

- On QFX5700s, peer interfaces show up and LEDs glow during device reboot for DAC connections. PR1574342

- On QFX5220 and QFX5130, MTU changes causes interface to flap multiple times. PR1576199

- Port mirroring instance down with mirrored output as tagged interface. PR1593276

- The interface might not learn `mac-address` if it is configured with `vlan-id-list` starting with `VLAN id 1` and `native-vlan-id`. PR1597013

- On QFX5220, ping does not work due to egress queue buffer stuck on 400G interfaces. PR1618147

- On performing `request system snapshot`, the snapshot msg is not captured in /etc/motd file. PR1618946

Infrastructure

- The alarm **Host 0 Active Disk Usage Exceeded** might be generated due to large files which were already marked as deleted. PR1601251

User Interface and Configuration

- The `file copy` command is not accepting HTTPS URIs. PR1596881

Resolved Issues: 21.2R1

General Routing

- The **aggregate member links field** in the `show interfaces extensive` command output for an aggregated Ethernet interface does not reflect the number of member-links. PR1517841

- Ingress policer scale is limited to 128 due to a known issue in the Junos OS Evolved Release 20.3R1. PR1525525

- DHCPv6 relay might malfunction on QFX Series with Junos OS Evolved platforms. PR1545754

- Changing the mru and cable lengths to very low values can cause packets to drop. PR1547736

- SRTE might stay in the Up state when the routes are deleted through policy. PR1547933

- Traffic loss might happen if the flushing issue happens on the scale of ARP entries for the logical interface of the IRB interface. PR1554151

- **ICMP destination unreachable** message is not sent from the QFX5130 when a firewall filter action rejects the packet. PR1563404

- Routes learned through IRB interface might not be reachable in IBGP setup. PR1568566

- The BGP sessions might intermittently flap if the egress sFlow sampling is enabled at a high sampling rate. PR1571636

- ZTP must overwrite configuration derived from DHCP options with configuration from downloaded configuration file. PR1577004

- QFX5130 and QFX5220 object anomalies seen with the PTP TC configuration. PR1577375

- If you change the dynamic mode from DLB to non-DLB, the ECMP creation API does not work.PR1579245

- The traffic related to native VLAN might be dropped.PR1581075

- Port mirroring instance might be down on Junos OS Evolved based platforms. PR1593276

- The interface might not learn `mac-address` if it is configured with `vlan-id-list starting` with `VLAN id 1` and `native-vlan-id`. PR1597013

- The ndp process might reach to 100% and might result in traffic drop. PR1551644

Infrastructure

- ToS of self-initiated packets might change unexpectedly. PR1578247

Interfaces and Chassis

- Commit fails with error **VLAN-ID can only be specified on tagged ethernet interfaces**, while deleting Layer 3 sub-interface. PR1564703

User Interface and Configuration

- The port_speed configuration details not present in the picd configuration for ports et-0/0/128 and et-0/0/129. PR1510486

- The Junos OS Evolved operational state might be incorrect on the system and CoS scheduler configuration change might not take effect. PR1536615

Upgrade Your Junos OS Evolved Software

Products impacted: ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016, QFX5130-32CD, QFX5220-32CD, QFX5220-128C, and QFX5700.

Follow these steps to upgrade your Junos OS Evolved software:

1. Using a Web browser, navigate to the All Junos Platforms software download URL on the Juniper Networks webpage: https://www.juniper.net/support/downloads/

2. In the Find a Product box, enter the Junos OS platform for the software that you want to download.

3. Select Junos OS Evolved from the OS drop-down list.

4. Select the relevant release number from the Version drop-down list.

5. In the **Install Package** section, select the software package for the release.

6. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by a Juniper Networks representative.

7. Review and accept the End User License Agreement.

8. Download the software to a local host.

> **NOTE**: We don't recommend that you download the Services Profile 1 image to use the lean rpd profile. We will deprecate this image in Junos OS Evolved 21.4R1. For more information about the types of Junos OS Evolved installation package prefixes, see Junos OS Evolved Installation Packages.

9. Copy the software to the device or to your internal software distribution site.

10. Install the new package on the device.

> **NOTE**: We recommend that you upgrade all software packages out of band using the console because in-band connections are lost during the upgrade process.

For more information about software installation and upgrade, see Software Installation and Upgrade Overview (Junos OS Evolved). For more information about EOL releases and to review a list of EOL releases, see https://support.juniper.net/support/eol/software/junosevo/.

Licensing

In 2020, Juniper Networks introduced a new software licensing model. The Juniper Flex Program comprises a framework, a set of policies, and various tools that help unify and thereby simplify the multiple product-driven licensing and packaging approaches that Juniper Networks has developed over the past several years.

The major components of the framework are:

- A focus on customer segments (enterprise, service provider, and cloud) and use cases for Juniper Networks hardware and software products.

- The introduction of a common three-tiered model (standard, advanced, and premium) for all Juniper Networks software products.

- The introduction of subscription licenses and subscription portability for all Juniper Networks products, including Junos OS and Contrail.

For information about the list of supported products, see Juniper Flex Program.

Finding More Information

- **Feature Explorer**—Juniper Networks Feature Explorer helps you to explore software feature information to find the right software release and product for your network.

    https://apps.juniper.net/feature-explorer/

- **PR Search Tool**—Keep track of the latest and additional information about Junos OS open defects and issues resolved.

    https://prsearch.juniper.net/InfoCenter/index?page=prsearch

- **Hardware Compatibility Tool**—Determine optical interfaces and transceivers supported across all platforms.

    https://apps.juniper.net/hct/home

    > **NOTE**: To obtain information about the components that are supported on the devices and the special compatibility guidelines with the release, see the Hardware Guide for the product.

- **Juniper Networks Compliance Advisor**—Review regulatory compliance information about Common Criteria, FIPS, Homologation, RoHS2, and USGv6.

    https://pathfinder.juniper.net/compliance/

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using either of the following methods:

- Online feedback system—Click TechLibrary Feedback, on the lower right of any page on the Juniper Networks TechLibrary site, and do one of the following:
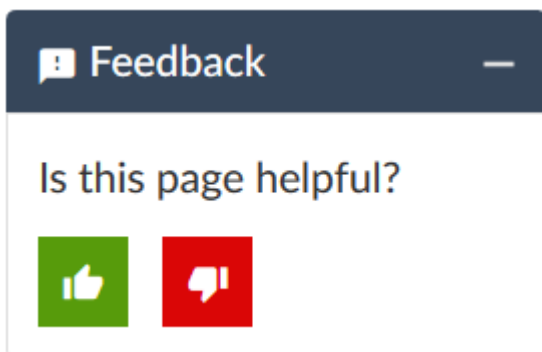
  - Click the thumbs-up icon if the information on the page was helpful to you.

  - Click the thumbs-down icon if the information on the page was not helpful to you or if you have suggestions for improvement, and use the pop-up form to provide feedback.

- E-mail—Send your comments to techpubs-comments@juniper.net. Include the document or topic name, URL or page number, and software version (if applicable)

Requesting Technical Support

IN THIS SECTION

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active Juniper Care or Partner Support Services support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the JTAC User Guide located at https://www.juniper.net/content/dam/www/assets/resource-guides/us/en/jtac-user-guide.pdf.

- Product warranties—For product warranty information, visit https://support.juniper.net/support/warranty/.

- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: https://support.juniper.net/support/

- Search for known bugs: https://prsearch.juniper.net/

- Find product documentation: https://www.juniper.net/documentation/

- Find solutions and answer questions using our Knowledge Base: https://supportportal.juniper.net/s/knowledge

- Download the latest versions of software and review release notes: https://support.juniper.net/support/downloads/

- Search technical bulletins for relevant hardware and software notifications: https://supportportal.juniper.net/s/knowledge

- Join and participate in the Juniper Networks Community Forum: https://www.juniper.net/company/communities/

- Create a service request online: https://supportportal.juniper.net/

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: https://entitlementsearch.juniper.net/entitlementsearch/

Creating a Service Request with JTAC

You can create a service request with JTAC on the Web or by telephone.

- Visit https://support.juniper.net/support/requesting-support/

- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see https://support.juniper.net/support/requesting-support/.

Revision History

10 August 2023—Revision 7, Junos OS Release 21.2R2 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016, QFX5130-32CD, QFX5220, and QFX5700 Devices.

24 November 2022—Revision 6, Junos OS Release 21.2R2 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016, QFX5130-32CD, QFX5220, and QFX5700 Devices.

29 July 2022—Revision 5, Junos OS Release 21.2R2 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016, QFX5130-32CD, QFX5220, and QFX5700 Devices.

20 January 2022—Revision 4, Junos OS Release 21.2R2 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016, QFX5130-32CD, QFX5220, and QFX5700 Devices

16 December 2021—Revision 3, Junos OS Release 21.2R2 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, PTX10016, QFX5130-32CD, QFX5220, and QFX5700 Devices

29 November 2021—Revision 2, Junos OS Release 21.2R2 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, QFX5220, and QFX5700 Devices.

16 November 2021—Revision 1, Junos OS Release 21.2R2 for the ACX7100-32C, ACX7100-48L, PTX10001-36MR, PTX10003, PTX10004, PTX10008, QFX5130-32CD, and QFX5220 Devices.